MARCH 15, 1954

A.R.E.A. Convention Program . . . p. 44

RAILWAY AGE

The Standard Railroad WEEKLY Since 1858

• Denver & Rio Grande Western freight winding along the scenic Colorado River in one of the most beautiful regions of the U.S.

Pennsylvania's New Import Ore Dock

Radio Controlled Switches on Santa Fe

Ignitron M-U Cars On the New Haven

Bridge Building on the Rock Island

Germany's "New Look" In Passenger Trains

Formula for Fast, Full-Season Weed Control:

Nalco® H-174

+

Nalco MECHANICAL SPREADERS

Nalco H-174 granular Weed Control Chemical, distributed with Nalco Track Mechanical Spreaders, is the fast, positive way to get full-season weed control in yards, along sidings and right-of-way. Around buildings, bridge and trestle footings and in other hard-to-reach places, the portable or off-track Mechanical Spreaders or the convenient Nalco H-174 Shaker Box do the job quickly, without waste.

Nalco H-174 action is powerful and lasting. One treatment, preferably before emergence, provides sufficient treatment to prevent growth during the season. Application after emergence provides a thorough kill and stays in the soil for months to prevent regrowth. H-174 is non-hazardous to humans and animals; safe to store and handle.

Your weed control requirement will determine the type of Nalco Mechanical Spreader best suited to your use. Whether manually-operated sling-type, mechanically-driven push-cart, or push-car-mounted, these spreaders are designed to give you accurate dosage control and excellent distribution of Nalco H-174.

Full data and prices on Nalco Weed Control Chemicals and Spreaders will be sent promptly upon request. Act now for a successful start on a one-treatment, all-season weed control program.

NATIONAL ALUMINATE CORPORATION
6200 West 66th Place • Chicago 38, Illinois
In Canada: Alchem Limited, Burlington, Ontario

FREE-FLOWING Nalco H-174 will not pack or clog in drums, boxes or spreaders. Uniformly-sized granules assure even distribution, eliminate dust nuisance and waste.

Nalco

PRODUCTS . . . Serving the Railroads through Practical Applied Science

It stays tight . . . and why

Once you install the Bethlehem 811 Rail Brace, it won't loosen, won't slip, can't pop out of place. Its unique wedge-and-spring feature maintains constant pressure on the rail. With the Bethlehem 811, even the most violent side thrusts won't jar the rail out of gage. Here's why:

1. The forged wedge fitting snugly against the rail web and flange, is driven into place. It is then under 20,000-lb spring compression. This compression alone practically eliminates slippage. But the brace has another safety factor . . .

2. The pawl-and-slot locking arrangement. The pawl bolts are an integral part of the brace, which is welded to the plate. Turn the pawls down into the slots in the wedge, and you lock the wedge in position. Now it won't budge, neither will the rail!

This simple yet foolproof rail brace is easy to install . . . nothing needed but a spike maul or hammer. Easy to adjust, too . . . simply disengage the pawls from the slots, advance the wedge to the desired tightness, then reposition the pawls. Spacing of the slots permits 1/16-in. adjustments.

The Bethlehem 811 is bracing turnouts and curves on railroads all over the country. A Bethlehem representative will be glad to take you to a nearby installation and point out to you the details of this dependable brace at first hand. Just call or write the nearest Bethlehem sales office.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM 811 RAIL BRACE

BETHLEHEM STEEL

Wayside operators and train crews communicate quickly using the new "UNION" I.T.C. Equipment

New "UNION" Single-Channel Two-Way Inductive Train Communication Equipment provides fast, sure *voice* communication between wayside stations and trains, between trains, and between cabs and cabooses. It saves time in transmitting information and promotes better train operation.

COMPACT, CONVENIENT EQUIPMENT

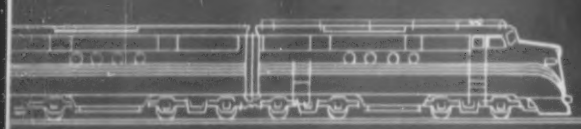
It's easy to find room for this equipment. The wayside equipment box is about 27 in. high, 30 in. wide, and 14 in. deep. Designed for easy maintenance and testing, the box, which is wall mounted, swings open for access to the wiring. The receiver, transmitter, power pack and line coupler are individual units, rack mounted and making electrical connections through spring mounted pre-loaded and pre-aligned contacts. A sturdy sheet metal cover protects the equipment.

Complete information is available from any of our District Offices.

The "UNION" I.T.C. control station takes very little desk space at a wayside station. And it features key-controlled air vents that permit connecting either the operator's headset and desk phone, or accessory handset into the line.

Individual units are coupled to the system with separable connectors. Shown is the Receiver.

The wayside equipment box, with ventilated cover removed, to show the orderly arrangement of the parts.



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DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

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NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

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March 15, 1954 **Vol. 136, No. 11**

Week at a Glance

More mass transportation, and better treatment for commuter railroads, are two essentials in any solution of the New York area's growing traffic headache. That idea, at least, runs all through a joint report of New York and New Jersey Rapid Transit Commissions. Officially, however, the commissions make no recommendation except for "comprehensive study of the problem by a bi-state agency." 11

Another "quiz" — this time on demurrage rules — features the bi-weekly Questions and Answers page. 16

FORUM: When are old freight cars obsolete? The fact is that "obsolescence is the result of change rather than chronological age." 43

What's new in engineering and maintenance—a 10-page round up of new and improved products for use in railway construction and maintenance. 52

This week at Chicago, when the American Railway Engineering Association holds its annual convention, the accent will be on engineering progress, with emphasis on recent construction projects and developments by manufacturers. 44

A new ore unloading terminal, with hourly capacity of 3,600 tons, is now ready for service on the Pennsylvania at Philadelphia. 45

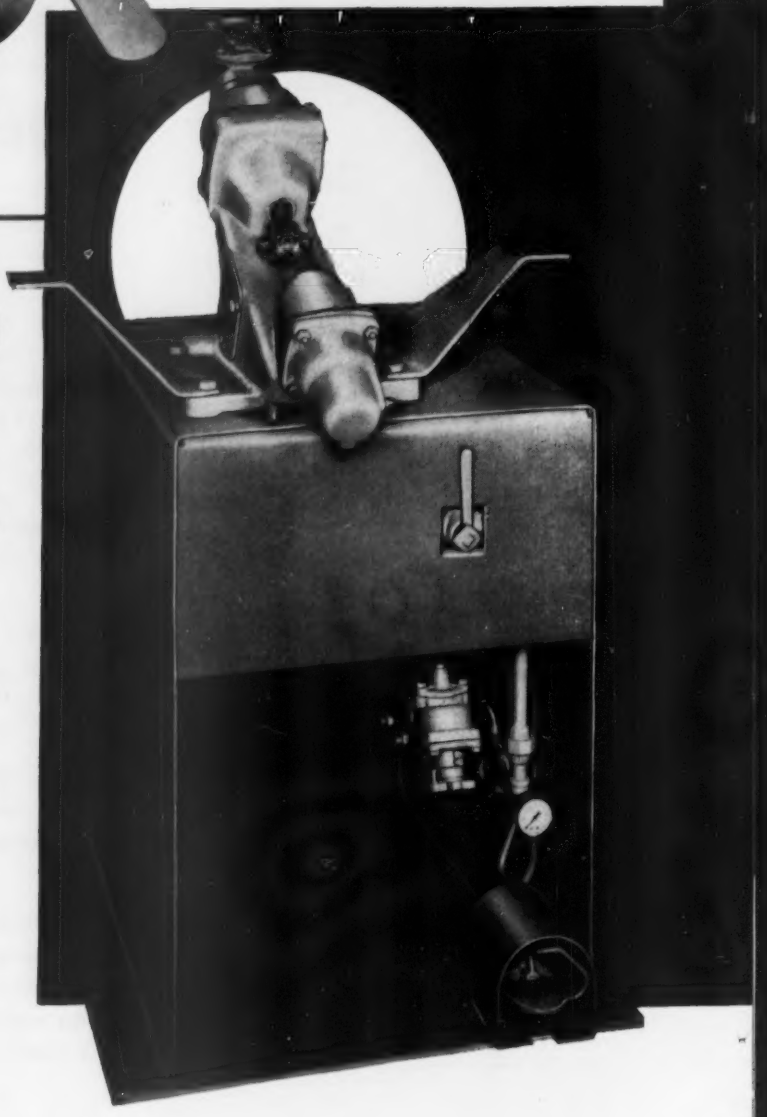
Bridges were built ahead of track on the Rock Island's recently completed Atlantic cut-off. 48

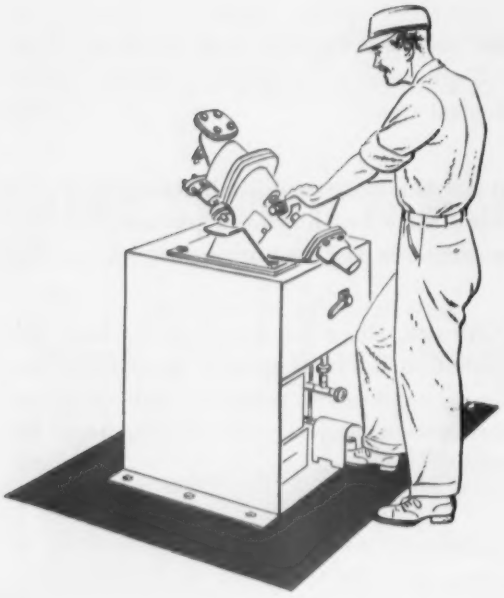
A revolution in passenger train design may be under way in Germany, where two new luxury trains, built according to aircraft principles, show that light weight impairs neither passenger safety nor riding qualities. 62

Apply Punch-Lok Hose Clamps in just 3 seconds

with the

Westinghouse Air Brake B-1 Clamping Machine





HERE is the quickest, and most economical way to apply hose clamps. In one operation, this new device pulls the hose clamp tight, locks it, and shears off the excess metal. Clamp tension is identical on every piece.

It's safe, too. The operator has a clear view of his work at all times because the table is conveniently sloped. And the foot pedal operating valve can be nullified at any point in the cycle, thus stopping the machine.

Get in touch with your Westinghouse Representative and see how easily the new B-1 can speed up production in *your* shop, and give you tighter, more uniform hose clamps.

Westinghouse Air Brake Company

AIR BRAKE DIVISION

WILMERDING, PA.

Current Statistics

Operating revenues, one month	
1954	$ 749,825,836
1953	863,014,651
Operating expenses, one month	
1954	$ 626,806,095
1953	661,700,939
Taxes, one month	
1954	$ 71,460,303
1953	102,920,396
Net railway operating income, one month	
1954	$ 32,574,078
1953	80,069,353
Net income, estimated, one month	
1954	$ 18,000,000
1953	57,000,000
Average price railroad stocks	
March 9, 1954	62.17
March 10, 1953	68.42
Carloadings, revenue freight	
Nine weeks, 1954	5,429,066
Nine weeks, 1953	6,081,342
Average daily freight car surplus	
Week ended March 6, 1954	129,386
Week ended March 7, 1953	74,819
Average daily freight car shortage	
Week ended March 6, 1954	257
Week ended March 7, 1953	1,327
Freight cars delivered	
February 1954	3,974
February 1953	7,780
Freight cars on order	
March 1, 1954	25,441
March 1, 1953	71,883
Freight cars held for repairs	
February 1, 1954	94,855
February 1, 1953	94,145

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Week at a Glance CONTINUED

Radio controls a power switch from a locomotive cab in a new radio application on the Santa Fe. 65

One hundred new ignitron rectifier multiple-unit cars are now going into commuter service out of New York, on the New Haven, as the Pullman-Standard Car Manufacturing Company completes their delivery. 66

Electronic equipment, by means of which an approaching train will automatically control track switches and signals at junction interlockings, is to be installed on the Flushing line of the New York City subways. 70

BRIEFS

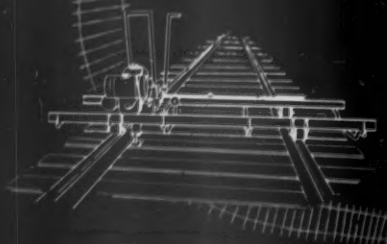
The Santa Fe is fully dieselized, according to a March 9 statement by President Fred G. Gurley. He reports that the road now owns 977 locomotives totaling 1,622 units, and including 90 passenger locomotives, 552 freight locomotives and 335 switchers.

The Wisconsin Central has emerged from its 22-year-long receivership and reorganization. A new Minnesota corporation—the Wisconsin Central Railroad Company—has taken over assets and properties of the Wisconsin Central Railway Company, which was a Wisconsin corporation. The new directions have named Edgar F. Zelle, who is chairman of the First National Bank in Minneapolis, as president. The 906-mile line will continue to be operated by the Soo Line.

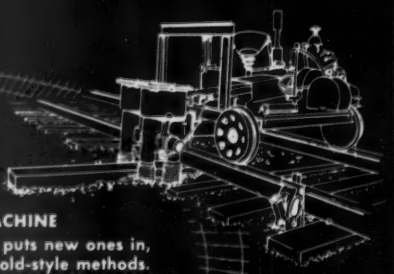
Defense Transport Administrator Knudson wonders whether the public should expect the services provided by subsidized parcel-post operations if it is sincerely interested in fostering private enterprise. He hopes for arrangements whereby parcel-post deficits would be eliminated without imperiling operations of the Railway Express Agency, "a needed transportation facility."

New York-Washington flights for $10! North American Airlines has requested Civil Aeronautics Board authority to operate shuttle air-coach service between

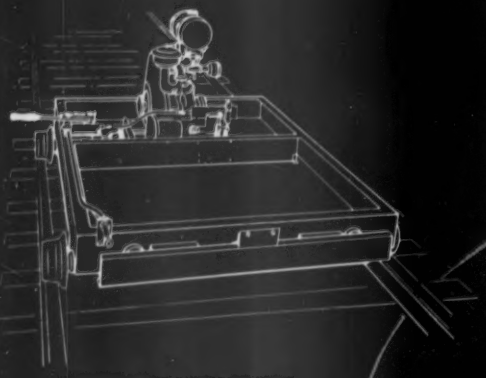
to keep
track
up to the
new Matisa
standard of maintenance



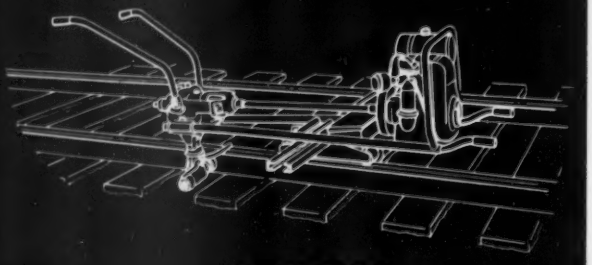
TIE ADZING MACHINE
No need to remove the rails! Merely remove tie-plates and adze under either rail, as desired. Saves time, labor, ties.



TIE RENEWAL MACHINE
Takes old ties out, puts new ones in, at half the cost of old-style methods. Leaves no rough track behind. Knurled steel rollers move new ties in either direction with the flick of a lever, spotting them precisely where wanted.



AUTOMATIC JACK CARRIER
For *unattended* shuttle service between a *Matisa Tamper* and the track raising gang, this self-powered car automatically *loads itself*, reverses its direction, and even stops by itself!



POWER WRENCH
Portable, rugged, lightweight, but engineered for *precision* work. Works on *both rails* without turning machine. An adjustable spring-loaded disc clutch affords the means of applying a predetermined and *constant* torque to track bolts.

Matisa
EQUIPMENT CORP.
224 S. MICHIGAN BLVD. · CHICAGO 4

TRACKWORK SPECIALISTS ALL OVER THE WORLD

Matisa

Week at a Glance CONTINUED

those cities at that cost to each passenger. Initially, flights would be offered on even hours from 8 a. m. to midnight. After three months the service would become hourly, with flights leaving each city on the hour from 7 a. m. until 8 p. m., and at 10 p. m. and midnight.

Abrogation of freedom of speech, and of petition, both guaranteed by the federal Constitution's Bill of Rights, seems to be what Pennsylvania truckers are driving at in their $250-million damage suit against eastern railroads. That, at least, is what rail lawyers contended in a recent court argument in the case. They pointed out that the first amendment guarantees individuals and organizations, alike, the right to present their point of view on public issues, and that prohibition of such activities, as urged by the truckers, would contravene that amendment.

Over $1 billion was spent by U. S. iron and steel companies to expand their plants last year, the American Iron & Steel Institute has announced. The industry will spend about $775,000,000 during 1954, it is estimated, which will bring such investment since the end of World War II to almost $6.4 billion.

Waybill statistics of the I.C.C. indicate that 1952 shipments in gondolas and hoppers yielded car-mile revenues of 80 cents and 67 cents, respectively. Only shipments in "special" type cars yielded more—92 cents. Boxcar traffic yielded 54 cents, the average for all cars was 57 cents, and the low (27 cents) was the yield from shipments in stock cars.

The Great Northern has stepped out of the family fare plan which most other western roads liberalized, effective March 1. A GN spokesman said the road is "giving participation continued consideration" and "awaiting the report of eastern and western lines on the possibility of a uniform plan." He said the GN was "not entirely satisfied" with the liberalized plan of western roads, and that additional study seemed advisable.

Trailer-on-flat-car revenue (gross) on the New Haven totaled $1,358,970 in 1952, and $1,991,262 in 1953. Trailers handled in the two years numbered 34,505 and 50,154, respectively. The railroad now has 360 specially equipped flat cars in piggyback service, with another 100 on order, according to the proxy statement sent to stockholders with the company's 1953 annual report.

The House on March 10 passed and sent to the Senate the excise tax bill which would cut the passenger-fare tax from 15 to 10 per cent.

Frontier days are back again, at least in South America, where trains on a newly constructed rail line between Corumba, Brazil, and Santa Cruz, Bolivia, are said to be regularly attacked by bow-and-arrow shooting Yanaigua Indians. Firearms are reported to have been issued to train crews as a protective measure.

Recorded evidence of at least 1,058 alleged overloads within a period of 19 months has been found by Ohio Public Utilities Commission investigators on the books of a single Cleveland trucking firm. The evidence was uncovered in connection with the commission's efforts to suspend operating rights of trucking firms which consistently and persistently violate state laws.

"How many streets can you pave for $447? That's the question city officials of Little Rock, Ark., asked 23 truck lines having terminals there. The truckers wanted the streets they use repaved. And $447 is the amount, to the amazement of the city officials, that the truckers paid in city taxes in one year." —*Public Relations Office, Western Railways.*

This advertisement is one of a series currently running in national business magazines. We sponsor it in the belief that such a series will help make industry more aware of the outstanding record of railroad progress and achievement

ASF Ride-Control Package, the compact unit that allows soft-riding springs to be applied to older cars—*at costs in keeping with the economics of freight car operation.*

They're bringing older cars up to modern riding standards

Today, thousands of older freight cars are carrying your merchandise far more smoothly! One reason: railroads are making huge annual investments to modernize existing rolling stock.

To fully appreciate the real problems involved, consider just a few stark realities of freight train operation. Each railroad deals not with one plant or a dozen products, but with *thousands of cars.* These cars necessarily have to earn their way in just a few hours every day—and on the average, up to 70% are in interchange on other roads!

Nevertheless, many improvements are being made. For example, hard-riding springs are being replaced with the Ride-Control® Package, developed by American Steel Foundries. Packages make the older cars available for unrestricted use at today's higher speeds; another way of saying a smoother-riding car *where* you want it and *when* you want it.

Such improvements, of course, have to be practical *economically* as well as mechanically. That's the yardstick railroads use. And that's why they offer you better freight service . . . *at a bigger value than ever before.*

American Steel Foundries

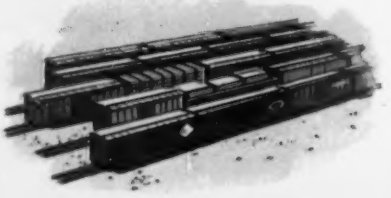
World's largest producers of railroad running gear

Executive Offices: Wrigley Building, Chicago 11

Lading damage index plummets when old springs are replaced by the Package. Comparison is from a typical "before and after" test—i.e., same car, carrying same load on same track.

LADING DAMAGE INDEX: 45,877
Car mounted on old-type coil springs. Speed: 56 mph.
LADING DAMAGE INDEX: 3,085
Same car equipped with Ride-Control Packages. Speed: 84 mph.

Today's modern freight car pool carries more freight with 25% fewer cars, averages more than 50% higher speeds. And, reported car shortages are down 84% since 1950!



Canadian Equalization Shapes Up

New class-rate scale, effective March 1, 1955, will lower freight rates in western provinces

A new class-rate scale, as a step toward equalization on a Dominion-wide basis of charges on railway freight, has been ordered by the Canadian Board of Transport Commissioners, to become effective March 1, 1955.

The general result of the new scale will be to reduce the historically higher freight rates in western provinces, while slightly increasing most eastern class rates, with the general objective of giving all shippers, wherever located, substantially the same rates for movement of equal amounts of similar freight over equal distances. It will apply, in terms of freight-revenue dollars, to ceiling rates on about one-fifth of Canada's total freight traffic, but rulings on equalization of other types of rates are expected to follow, until rates on at least half the Dominion's rail traffic are equalized as between different areas.

The new class rates were originally planned to become effective January 1 of this year, but were postponed first to January 1, 1955, and now to March 1 of that year. On the latter date, the five per cent class rate reduction given to western provinces last November will be abolished, and superseded by the new scale, summarized in an accompanying table.

Regional Effects — Principal effects of the new scale, by provinces are expected to be as follows:

- Saskatchewan, Alberta and British Columbia—the three far western provinces—will get the greatest reductions.
- Manitoba will have a somewhat lower overall rate level, but the reduction will not be as great as in territory farther west.
- Ontario and Quebec will have "moderately higher" rates.
- Maritime provinces—New Brunswick, Nova Scotia and Prince Edward Island—and Newfoundland, will continue to pay substantially the same rates as at present on freight moving within their own borders, because the Transport Board ordered that full equalization should stop short of Atlantic territory in line with protection given that area through the Maritime Freight Rates Act of 1927. On traffic moving between the Maritimes and points west, however, the new scale will apply to that portion of the haul outside the Atlantic region.

The "rate triangle" blanketing parts of Ontario and Quebec will be retained.

CPR Appeals—Meantime, the Canadian Pacific has announced an appeal on points of law, to the Supreme Court of Canada from the Transport Board's February 15 decision rejecting its application for a nine per cent rate increase. That increase had been requested in line with the company's contention that the board should set rates at a level which would allow it to earn a "just and reasonable" return of 6½ per cent on its railway investment of $1,147,000,000 (*Railway Age*, February 22, page 16).

REVISED CANADIAN CLASS-RATE SCALE

Distance, Miles		*Mileage Blocks*	*Rate per 100 Lb.*
Minimum—20		20 miles	50¢
			Rate per 100 Lb. per 100 Mi.
Over	20 to 60	5 miles	$1.00
"	60 to 100	10 "	50¢
"	100 to 200	25 "	40¢
"	200 to 1,500	25 "	36¢
"	1,500 to 2,000	50 "	36¢
"	2,000 to 2,600	50 "	32¢
"	2,600 to 3,300	50 "	28¢

"Ladies Day" Fares A Hit, C&EI Finds

The Chicago & Eastern Illinois has revived its "Ladies Day" fare plan, which was tried as an experiment from September 1953 through December. During that period, the road, on Tuesdays, permitted ladies to travel from 13 different Indiana and Illinois communities to Chicago and back for the price of a regular one-way adult coach fare (*Railway Age*, October 5, 1953, page 16).

Since the experiment terminated, Elmer E. Gordon, passenger traffic manager, reports being "besieged by agents in each city where the special fare was in effect." "At the same time," he says, "we have received numerous inquiries from individuals asking that it be resumed. We are bowing to the wishes of our customers."

All trains that honor the tickets are equipped with post-war-built reclining-seat coaches. It was part of the plan to enable the ladies to sample modern rail travel.

Figures of the Week

Third of "Potential" Tonnage Lost Since 1928

Between 1928 and 1952, Class 1 line-haul railroads lost nearly one-third of their "potential" freight tonnage.

That is the extent to which they failed in 1952 to maintain their 1928 position as carriers of freight originating from production in this country.

This was shown by the latest study of "Fluctuations in Railway Freight Traffic Compared with Production," which has been issued by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. The study, Statement No. 542, bears the usual disclaimer noting that it was not considered or adopted by the commission. It was prepared by Leroy E. Peabody under supervision of C. S. Morgan, both of the bureau's staff.

New Method — Its "short-cut" method marks a departure from the plan of its predecessors, the latest of

RALEIGH MULL (right), dining car steward on the Katy's Texas Special, receives his "Railroad Man of the Year" award from Harrison C. Hobart, assistant secretary of labor. The award, consisting of a gold medal and a $100 savings bond, is made annually by the Federation for Railway Progress. Mr. Mull won this year for "outstanding courtesy and service rendered the traveling public."

which was Statement No. 5212 (*Railway Age*, May 26, 1952, page 57). The bureau's director, W. H. S. Stevens, explained that the new method was adopted to make possible an earlier release and to reduce the volume of work.

Potential tonnage is the amount the railroads would have carried if they had maintained their 1928 position. Against this, the actual traffic is set; and the difference measures the railroad "loss."

Potential tonnage in 1952 was put at 2,060,211,000 tons. Railroad traffic in that year was 1,382,604,000 tons, only 67 per cent of the potential. The "loss" was 677,607,000 tons.

In 1928, railroad tonnage amounted to 46.75 per cent of total production. The 1952 proportion was 31.37 per cent. Production increased more than 55 per cent between 1928 and 1952, but railroad tonnage was up only about four per cent.

January Net Off

Class I railroads in January had an estimated net income, after interest and rentals, of $18,000,000, according to the Bureau of Railway Economics of the Association of American Railroads. The comparable figure for January 1953 was $57,000,000.

Net railway operating income, before interest and rentals, was $32,574,078 for this year's first month, compared with $80,069,353 for January 1953.

In the 12 months ended January 31, the rate of return for Class I roads averaged 4 per cent, compared with 4.21 per cent for the 12 months ended January 31, 1953.

Gross in January amounted to $749,825,836, a decrease of 13.1 per cent below the $863,014,651 reported for January 1953. Operating expenses, at $626,806,095, were down 5.3 per cent from January 1953's $661,700,939.

Forty-six Class I roads failed to earn interest and rentals in January, the A.A.R. reported.

CLASS I RAILROADS—UNITED STATES

	Month of January 1954	1953
Total operating revenues	$749,825,836	$863,014,651
Total operating expenses	626,806,095	661,700,939
Operating ratio—per cent	83.59	76.67
Taxes	71,460,303	102,920,396
Net railway operating income (Earnings before charges)	32,574,078	80,069,353
Net income, after charges (estimated)	18,000,000	57,000,000

Freight Car Loadings

Loadings of revenue freight in the week ended March 6 totaled 590,567 cars, the Association of American Railroads announced on March 11. This was a decrease of 4,464 cars, or 0.8 per cent, compared with the previous week; a decrease of 94,297 cars, or 13.8 per cent, compared with the corresponding week last year; and a decrease of 122,545 cars, or 17.2 per cent, compared with the equivalent 1952 week.

Loadings of revenue freight for the week ended February 27, which included the Washington's birthday holiday, totaled 595,031 cars; the summary for that week, compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, February 27

District	1954	1953	1952
Eastern	105,987	125,518	135,714
Allegheny	115,966	143,668	161,496
Pocahontas	41,545	48,409	61,169
Southern	112,901	121,032	128,617
Northwestern	65,308	66,914	82,790
Central Western	101,144	110,736	123,977
Southwestern	52,180	52,377	62,081
Total Western Districts	218,632	230,027	268,848
Total All Roads	595,031	668,654	755,844
Commodities:			
Grain and grain products	41,586	39,434	53,017
Livestock	6,523	6,430	8,069
Coal	95,008	115,294	145,814
Coke	8,823	14,998	16,012
Forest products	37,418	39,818	44,196
Ore	15,735	19,319	21,647
Merchandise l.c.l.	58,646	63,593	76,909
Miscellaneous	331,292	369,768	390,180
February 27	595,031	668,654	755,844
February 20	618,623	689,430	683,551
February 13	623,706	681,604	737,776
February 6	624,385	690,613	733,919
January 30	628,190	697,442	731,218
Cumulative total nine weeks	5,429,066	6,081,342	6,472,809

In Canada. — Carloadings for the seven-day period ended February 21 totaled 66,851 cars, compared with 68,546 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
February 21, 1954	66,851	38,327
February 21, 1953	70,648	29,243
Cumulative Totals:		
February 21, 1954	470,940	214,473
February 21, 1953	525,287	226,674

643 Salaries of $20,000 Or More Paid in 1952

There were 643 railroad officers receiving compensation during 1952 at the annual rate of $20,000 or more. Average compensation for the group amounted to $33,488.

This was shown in a compilation, Statement No. 541, issued by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission.

In the previous year, 1951, there were 607 officers receiving compensation at the $20,000 rate and their average annual compensation was $33,255.

The figures cover both Class I line-haul roads and Class I switching and terminal companies. Total amounts paid to the $20,000-and-over groups in 1952 and 1951 were $21,532,619 and $20,185,917, respectively.

Twenty-nine officers in the 1952 group received salaries of $70,000 or more, and 243 were in the $20,000-to-$24,999 bracket. These latter received 25.59 per cent of the total paid to the $20,000-and-over group in 1952.

The commission's reporting requirements called for information from each road as to the five persons receiving the largest amounts of compensation during 1952, regardless of the salary basis. This listing, together with those in the $20,000-and-over group, made a total of 967 officers whose salaries were recorded in the returns.

The 967 received aggregate compensation in 1952 of $25,278,300, or an average of $26,141. This average was $25,364 in 1951, when 946 officers were covered. As the bureau noted, some or all of the top five officers of some roads did not receive as much as $20,000 in either year.

1953 Accident Figures Shown in I.C.C. Report

The I.C.C. has made public its Bureau of Transport Economics and Statistics' preliminary summary of "steam" railway accidents for December and the entire year 1953.

The summary, which is subject to revision, showed that in the 12 months of last year there was a decline in "train accidents." The drop was from 10,085 in 1952 to 8,973 in 1953.

Twenty-one passengers were killed in train accidents in 1953, and there were 598 others injured. In the previous year there were 277 injuries and no deaths.

The bureau's entire compilation follows:

Item	Month of December 1953	1952	12 mos. ended with December 1953	1952
Number of train accidents*	646	926	8,973	10,085
Number of accidents resulting in casualties	44	54	538	562
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	62	53	986	999
Injured	46	64	958	935
Passengers on trains:				
(a) In train accidents*				
Killed	—	—	21	—
Injured	5	82	598	277
(b) In train-service accidents				
Killed	3	1	22	12
Injured	145	154	1,774	1,715
Travelers not on trains:				
Killed	2	—	9	9
Injured	97	92	856	760
Employees on duty:				
Killed	26	36	307	352
Injured	1,509	1,775	19,375	20,536
All other nontrespassers:**				
Killed	180	162	1,604	1,554
Injured	608	685	5,538	5,763
Total—All classes of persons:				
Killed	273	252	2,949	2,926
Injured	2,410	2,852	29,099	29,986

*Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former caused damage of $325 or more to railway property in 1952. Beginning January 1, 1953, this minimum was raised to $350. Only a minor part of the total accidents result in casualties to persons, as noted above.

**Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and nontrespassers, were as follows:

Persons:				
Killed	165	157	1,502	1,407
Injured	480	491	3,821	3,904

"Next War Will Be Different"

Transport agencies must expect enemy interruption and larger burdens, Army's chief of transportation warns

"The oceans are no longer a barrier. In the event of war, our domestic transportation problems will be vastly different from those of the past. Railroads must expect enemy interruption. We know the potential enemy is capable of it and our planning must be on that basis."

Those words formed the basic message which Major General Paul F. Yount, chief of transportation of the Department of the Army, brought to members of the National Defense Transportation Association at a recent luncheon sponsored by the organization's Chicago chapter.

General Yount told what duties railroads, as well as other segments of the transportation industry, would be called upon to assume in the event of full-scale war. Today's planning is based upon carrying the war to the enemy as quickly as possible, he explained, "and we need every kind of transportation to do so." In the event of major mobilization, competitive aspects of our transportation system must become secondary to needs of the emergency, he said.

Requirements of civil defense—evacuation of stricken areas, transport of medical supplies, food, clothing, etc., in huge quantities and on short notice—would be a major and wholly new burden which the carriers must be prepared to assume over and beyond military needs, he warned.

Getting Acquainted — The general explained the armed forces program of getting a more practical acquaintance with the various transport media, their physical plant, capabilities, shortcomings, etc.—a subject, he admitted, in which the armed services have been deficient in the past. He said the Army's current program calls for placing 26 men in branches of the transportation industry each year. "They are to learn both the ropes and the language," he explained, adding that without knowledge thus gained, the armed forces might place unrealistic burdens upon the industry with serious consequences. "The failure of our transportation plant can spell the difference between winning or losing the next war—regardless of the ability of the armed forces," he stated.

After outlining the scope and duties of the various military service organizations that deal directly with the transportation industry, General Yount cautioned his audience not to conclude that it is the purpose of these organizations to "control" railroads or any part of the transportation industry. "I much prefer to see railroads run themselves," he said. "Management control is the best thing we can have. The services need only the cooperation of management—but that is vital if we are to meet the needs of a national emergency."

Undersold—"All transportation is deficient in selling its importance to the people of the nation. Very little thought is given to the industry's impact on our daily life," the general continued. "I urgently request all to 'sell' transportation and to spell out how important the industry is to the United States."

ONE OF 10 new all-steel cabooses built for the Illinois Terminal by the St. Louis Car Company, all equipped with Motorola communications radio. In addition to oil lamps, the cabooses have five inside electric lamps for operation off the road's 600-volt trolley wire when the cars are parked.

Satco-Lined Journal Bearings Reduce Hot Boxes

According to a circular letter recently issued by the A.A.R. Mechanical Division, the Santa Fe started in August 1952 to equip 1,000 refrigerator cars with journal bearings lined with Satco metal and now reports such promising results in reduction of hot boxes that the railway wishes to extend use of this type of bearing to all refrigerator cars. The cars will be equipped as they become due for repacking under provisions of Interchange Rule 66 by the car owner.

For purposes of identification, the journal-box lids are being stencilled with the letter "S," 2 in. high on each box lid with white paint, and the journal bearing itself is stencilled on the outer end of the brass with the letter "S," ¾ in. above the bearing surface. It is requested that reports or comments on operation of cars thus equipped be sent to the engineer of tests, Santa Fe, Topeka, Kan.

Would Create Commission To Study New York Traffic

A single bi-state agency should be established "forthwith" to make a "thorough and comprehensive study and report on ways and means for relieving, presently and in the long-range future, traffic congestion, frequently approaching self-strangulation," in the New York metropolitan area.

That is the recommendation of a report submitted jointly on March 3 by the New York and New Jersey Metropolitan Rapid Transit Commissions to the governors and the legislatures of those two states. The report itself is a printed document of 102 pages, and includes maps, charts, statistical tabulations, and summaries of evidence taken by the two commissions in joint hearings.

"No Small Plans"—"Transit and traffic in the [New York] metropolitan area," says the report, "have now exceeded the point of full saturation. Self-strangulation is becoming increasingly acute. The needs of this vast region, constituting in essence one great metropolitan community, as they will exist in 1960 and 1970, and as they presently concern its economy, its civil defense and the convenience of its people, are of urgent pressing importance. No single formula can solve the complex problem . . . . No small plans will work. The first essential, therefore, is an adequate comprehen-

sive study based on all available facts, which will result in an overall coordinated plan. . . ."

It was the joint commissions' convictions as to the necessity for such a study that led to their recommendation for creation of a single bi-state body. That group should have, the commissions said, "a minimum provision of at least $100,000" and should be assured of the "active assistance and cooperation" of the various state, municipal, and other public and quasi-public organizations which are interested in the problem, "including particularly railroads, other transportation companies and utilities."

Otherwise, because of the limited time and funds at their disposal, the two commissions do not "propose or endorse any specific plan" for relief of the metropolitan area's traffic problems; they describe their report simply as "a first step."

Norton Hits Single Per Diem Rate

President of NYS&W says inflation has destroyed its "validity;" considers it harmful to industry

Has the inflationary trend since World War II destroyed the validity of the single per diem rate? Definitely so, in the opinion of Henry K. Norton, president of the New York, Susquehanna & Western.

Mr. Norton testified last week as hearings resumed in the current per diem case at the I.C.C. He attacked the "dogma of the single per diem rate" with these specific charges:

(1) It is "grossly inequitable" to small roads and terminal lines and can throw weaker roads into bankruptcy.

(2) It deprives the industry of specially built cars—heavy duty well cars, damage-free cars, and the like — needed to meet truck competition.

(3) It provides large car-owning roads with incentive for holding "old, inefficient and outmoded equipment" in service just as long as it can be kept together.

Old Cars Profitable — "The dogma of a single rate for all cars pays an extremely handsome profit on the old cars," Mr. Norton declared. The figure should be low enough to discourage their retention, not encourage it, he said. He called it "wholly unrealistic" to lump into one rate a fair compensatory charge for an old car and a charge for a modern car "built at inflated prices."

The statement by Mr. Norton was a revision of remarks he had planned to make at the initial I.C.C. hearing in January. His original statement was never presented. Hearing Examiner Hosmer threatened to bar the testimony to keep the record free of "recriminations," and a recess was granted to give Mr. Norton time to revise or defend his views (*Railway Age*, February 1, page 10).

The "revised" testimony compared postwar rises in freight rates and in per diem charges. Mr. Norton said rates have gone up on an average of 78.9 per cent, and per diem charges by 140 per cent.

Rich Get Richer—Effect of this unequal rise, he said, has been to increase revenues of large car-owning roads by more than the percentage approved by the commission. At the same time, he added, the increased per diem has "substantially reduced" benefits which small roads and terminal lines might have expected from higher freight rates.

It is quite apparent that a year at the $2.40 rate, assuming the continuation of the present freight rates, would leave the Susquehanna unable to earn its bond interest, "Mr. Norton declared.

I.C.C.'s Role—The Susquehanna is a defendant in the per diem proceeding. The case, docketed as No. 31358, originated last September when a group of Class I roads filed a complaint against other carriers which have refused to pay the current per diem rate of $2.40.

The complaint asked the I.C.C. to find the $2.40 rate, as well as the previously existing rates of $1.75 and $2.00, as "just and reasonable;" and that "uniform observance" is required.

Mr. Norton suggested that roads with per diem credit balances have pushed for higher per diem, and in such moves have had the support of carriers who, in effect, "want to keep friendly connections friendly." Roads whose per diem receipts are approximately the same as per diem payments stand to lose substantially more from diversion than they do from increased per diem, he said.

Small roads and terminal lines are placed at a disadvantage, Mr. Norton continued, by Car Service Rule No. 1. This rule calls for use of foreign cars on traffic moving beyond the originating road, and, according to Mr. Norton, makes it "futile" for terminating carriers to increase car ownership.

The Susquehanna president described how his road and others similarly situated tried to obtain downward revision of per diem rates as early as 1949; and how he eventually proposed, without success, an "average" per diem which uses a graduated scale based on the age of cars.

THIS FOREST - CONSERVATION CAR, converted from a Canadian National sleeping car into a traveling lecture hall, has been assigned to the Canadian Forestry Association. The car, staffed by a full-time lecturer, will travel through woodland areas of northern Ontario, Quebec and the Maritime provinces to teach citizens the importance of forest protection. It is equipped with a public address system and a motion picture projector and its "auditorium" will seat 52 persons.

In Congress

Commodities Clause For Pipe Lines Proposed

Application of a commodities clause to common-carrier pipe lines is proposed in a bill introduced in the Senate by Senator Gillette, Democrat of Iowa.

The bill, S.2075, would add to the Interstate Commerce Act provisions prohibiting such carriers from transporting commodities in which they had any interest. The act now contains a clause applicable to railroads.

Bill Would Cut Bulk Water Carrier Exemptions

A bill designed to bring about I.C.C. regulation of bulk carriers on inland waterways which are in competition with other transport agencies has been introduced in the Senate by Senator Bricker, Republican of Ohio.

Under present law, inland water carriers hauling no more than three types of dry commodities in bulk are exempt from regulation. The bill would remove that exemption except as to carriers on the Great Lakes.

Its introduction was hailed by the Conference for Inland Waterways Dry Bulk Regulation which called it a "first step to eliminate a glaring inconsistency in the Interstate Commerce Act."

Law and Regulation

Wider Corporate Ownership Is Best Anti-Communism

Every American should own "some share in the institutions and industries that constitute our economic wealth," Cyrus Eaton, chairman of the Chesapeake & Ohio, said before a recent weekly forum of the Cleveland City Club.

"The way to combat communism," he continued, "is not by witch-hunting and wiretapping. These police-state methods may gain momentary notoriety for the office-seeking politicians who advocate and employ them, but they offer no solution for our long-term economic problems. Common stocks owned by the citizenry and common sense exercised by business and political leaders would be the most effective antidote against communism."

Mr. Eaton also hit at "federal and state commissions which, under the influence of the multitudes of lawyers who serve on government agencies, have devised more rules and regulations to hamper and restrict the initiative and resourcefulness of railroad management than you could imagine." Needed reforms will occur only if leadership is taken by all railroad employees in the movement toward freeing railroads from "too much bureaucratic interference," he said.

I.C.C. Allows More Time In T-O-F-C Rules Case

Another 30-day extension has been granted by the Interstate Commerce Commission for interested parties to file suggestions on regulation of piggyback transportation. Deadline for such suggestions now is April 15.

This delay was requested by Eastern railroads. According to a commission notice, the carriers said they needed more time "to consider and formulate policy and position."

The I.C.C. instituted its piggyback proceeding (No. 31375) early in January. Division 3 was assigned the task of formulating rules which will enable T-O-F-C transportation to develop "with a minimum of legal controversy and uncertainty."

Freight Forwarders—A newcomer in the case last week was the Freight Forwarder Institute. The forwarder group said the commission is embarked on an "inappropriate approach" to the problem, and suggested the entire proceeding be abandoned.

The right of the commission to promulgate rules on piggyback transportation has been challenged (by the National Industrial Traffic League and Western railroads), the forwarder statement said. It added that even if the commission does have the right, the petition filed last October by the New Haven "presents neither the occasion nor the necessity for exercising that right."

The New Haven petition posed 20 "substantial and practical" questions about piggybacking, and asked the commission for a declaratory order to clear up "uncertainties" surrounding the service.

As an alternative to dropping the case, the forwarder institute asked the I.C.C. for a "very substantial postponement" of the date by which views may be filed. Otherwise, it said, the commission is apt to get some "immature" suggestions.

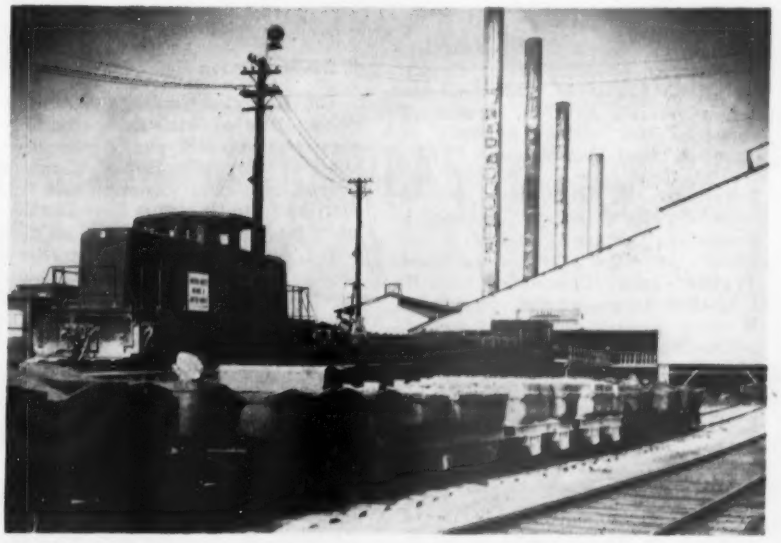
Organizations

D. Leon Williams, of Atlanta, executive director of the Georgia Ports Authority, has been elected chairman of the board of the newly created **South Atlantic & Carribean Ports Association,** which represents 10 ports authorities in North Carolina, South Carolina, Georgia, Florida and Puerto Rico.

At the recent annual dinner of the **Rochester Transportation Club,** Charles McIntosh, of the Rochester Gas & Electric Co., assumed the presidency. Other officers are C. W. Casey, C&M Forwarding Co., and R. C. Avery, Neisner Brothers, vice-presidents.

The 70th regular meeting of the **Allegheny Regional Advisory Board** will be held March 24-25, at the Hotel William Penn, Pittsburgh. Speaker at a luncheon on March 25 will be Arthur P. Hall, vice-president, public relations, Aluminum Company of America.

The **New York Railroad Club** will hold its annual Electrical Night on March 18. The program, arranged by Westinghouse Electric Corporation, includes an address by Robin S. Kersh, Westinghouse vice-president, on "Research—An Investment for the Future," and entertainment by the Westinghouse male chorus. H. E.



A 40,000-LB. LOAD goes up the eight per cent grade to the furnace.

FOUR HOURS LEISURE PER WEEK

The Atlantic Steel Company, of Atlanta, Ga., keeps one of its General Electric 80-ton locomotives busy 24 hours a day, seven days a week—except for four hours for weekly servicing—pushing 40,000-lb. loads of raw scrap and charging stock into open hearth furnaces. This 20-ton weight excludes the weight of the cars themselves. The incline shown, to the furnaces, is an 8 to 10 per cent grade.

During the weekly four-hour service period, the locomotive is given a complete lube oil, greasing, and bearing check. Because of the continuous process involved in production of steel, the locomotives can be given little time off. Major overhauls are made when the weekly service inspection indicates that such overhaul is necessary.

Atlantic Steel uses another G.E. 80-tonner primarily for around-the-clock yard switching, operating it like a locomotive on a small, short-line railroad. At times, this locomotive will haul as many as 12 gondolas. A third G.E. locomotive, weighing 65 tons, is used for general light duty operation around the yard. Because of the yard's size and the material handled, this engine, like the two others, is never given more than four hours off a week.

Dralle, district manager for Westinghouse, will introduce Mr. Kersh. The meeting will be held in the Century Room of the Commodore Hotel at 8:15 p. m. and will be preceded by a dinner at 7 p. m.

The **Transportation Club of St. Paul** has elected the following officers: President—Clayton F. Paulson, office manager, Bethlehem Steel Company; vice-presidents — Leo Savoie, freight traffic manager, National Carloading Company, and L. R. Garaghty, traffic manager, Minnesota Farm Service Bureau; secretary—Jack Teasdale, district freight agent, New York Central; and treasurer—Guy Dailey.

C. W. Nelson, of the Grand Trunk System, has been elected president of the **Railroad General Agents' Association of San Francisco.** Elected to serve with Mr. Nelson are: Vice-presidents—James K. Speight, Denver & Rio Grande Western, Raymond M. Young, Boston & Maine, and L. J. Breedlove, Chesapeake & Ohio; secretary—George P. Schultz, Baltimore & Ohio; and treasurer—Paul J. Snapp, Illinois Central.

Volney B. Fowler, director of public relations of the Electro-Motive division of General Motors Corporation, has been elected president of the **Public Relations Clinic of Chicago,** succeeding Marion J. Allen, director of personnel and public relations of American Steel Foundries.

Raymond P. De Groote, general western freight agent, Luckenbach Steamship Company, has been appointed secretary of the **Associated Traffic Clubs of America,** and R. P. Yellen, general agent, Norfolk & Western, assistant secretary-treasurer, succeeding R. A. Ellison, secretary-treasurer for the past 10 years.

Paul D. Christerson, of Pope & Talbot, Inc., Portland, Ore., has been elected president of the **Western Wood-Preserving Operators' Association,** succeeding Henry Garnjobst, Jr., of the American Lumber & Treating Co. Vice-president is Mel R. Knudson, of J. Neils Lumber Company, Libby, Mont., while William A. Jackson, Baxco Corporation, becomes treasurer. James McGregor, of McCormick & Baxter Creosoting Co., Portland, is secretary.

The **Trans-Missouri-Kansas Shippers Board** will hold its 100th regular and 32nd annual meeting in the De Soto Hotel, St. Louis, March 17-18. F. L. Deming, vice-president of the Federal Reserve Bank of St. Louis, will be guest speaker at a joint luncheon session with the **Traffic Club of St. Louis.**

The **Railroad General Agents Association of Los Angeles** has elected H. H. Knocke, assistant general freight agent, Great Northern, as president. Named as vice-presidents are Douglas Seaman, district passenger agent, Pennsylvania; G. T. Buckley, district freight and passenger agent, Gulf, Mobile & Ohio, and C. O. Huff, general agent—passenger department, Rock Island. M. C. Mauhs, Baltimore & Ohio, is the new secretary-treasurer.

Warren Brown, president of the Chicago, Indianapolis & Louisville, will be guest speaker at the annual meeting of the **Pacific Northwest Advisory Board.** He will speak on "Ethics in American Transportation." The meeting will be held March 18 in the Multnomah Hotel, Portland, Ore.

The **Railway Business Women's Association of Atlanta** was recently organized with 152 charter members. Officers are: President, Elizabeth Greene, Southern; vice-presidents, Addie Gage, Fruit Growers Express Company, and Catherine Drummond, Seaboard Air Line; recording secretary, Bobbie Pace, Atlanta & West Point; corresponding secretary, Alma Harrell, Association of American Railroads; treasurer, Annie Lou Brigman, Nashville, Chattanooga & St. Louis.

The **Federation for Railway Progress** will hold its seventh annual dinner at the Waldorf-Astoria Hotel, New York, at 7 p.m., March 25.

Newly elected officers of the **Philadelphia Passenger Association** are: President, A. W. Kushmore, Reading; vice-presidents, W. W. Greene, Chicago & North Western, and E. H. Hatfield, Jr., Santa Fe; secretary, C. M. Hutchinson, Southern Pacific; treasurer, A. R. Kruse, Burlington; and historian, G. P. Morgan, Baltimore & Ohio.

The annual meeting of the **New England Shippers Advisory Board** will be held at the Hotel Bradford, Boston, March 24-25. The program for the general session, beginning at 9:30 a.m., March 25, will include addresses by John J. Quinn, vice-president, Boston Consolidated Gas Company, on an analysis of New England economy; Caleb R. Megee, vice-chairman, Car Service Division, A.A.R., on "National Trends"; and by Arthur C. Schier, vice-president—traffic, General Foods Corporation, on "Modern Distribution." S. T. Keiley, chairman, Railroad Contact Committee, will present "The Railroads' Report to Their Customers." At the luncheon session, T. G. Sughrue, president, Boston & Maine, will speak on "Building a Stronger Railroad."

The "Military Affairs" luncheon, sponsored by the **Traffic Club of St. Louis,** to be held at the Statler Hotel, has been postponed from March 15 to March 22.

Muriel White, of the Owens Illinois Glass Company, will be installed as president of the **Women's Traffic Club of San Francisco** at a luncheon on March 20, at the Mark Hopkins Hotel. Other officers for 1954-55 are: Vice-president, Frances Rutherford, General American Transportation Corporation; secretary, Barbara Thomas; and treasurer, June Oliver, Southern Pacific.

Abandonments

Lehigh Valley.—The I.C.C.'s Division 4 has denied this road's application for authority to abandon a 1.13-mile segment of branch line near Slatington, Pa. Abandonment was opposed by a slate company, only shipper on the line, and Division 4 found evidence of sufficient traffic to justify continued operation, at least for another year.

15,000 LOCOMOTIVES! —N.C. Dezendorf (left), vice-president of General Motors Corporation and general manager of its Electro-Motive Division, wears an understandable smile as he affixes a plaque to the side of a general-purpose locomotive marking it as the 15,000th diesel built by Electro-Motive. A. E. Stoddard, president of the Union Pacific, stands by ready to put the locomotive to work.

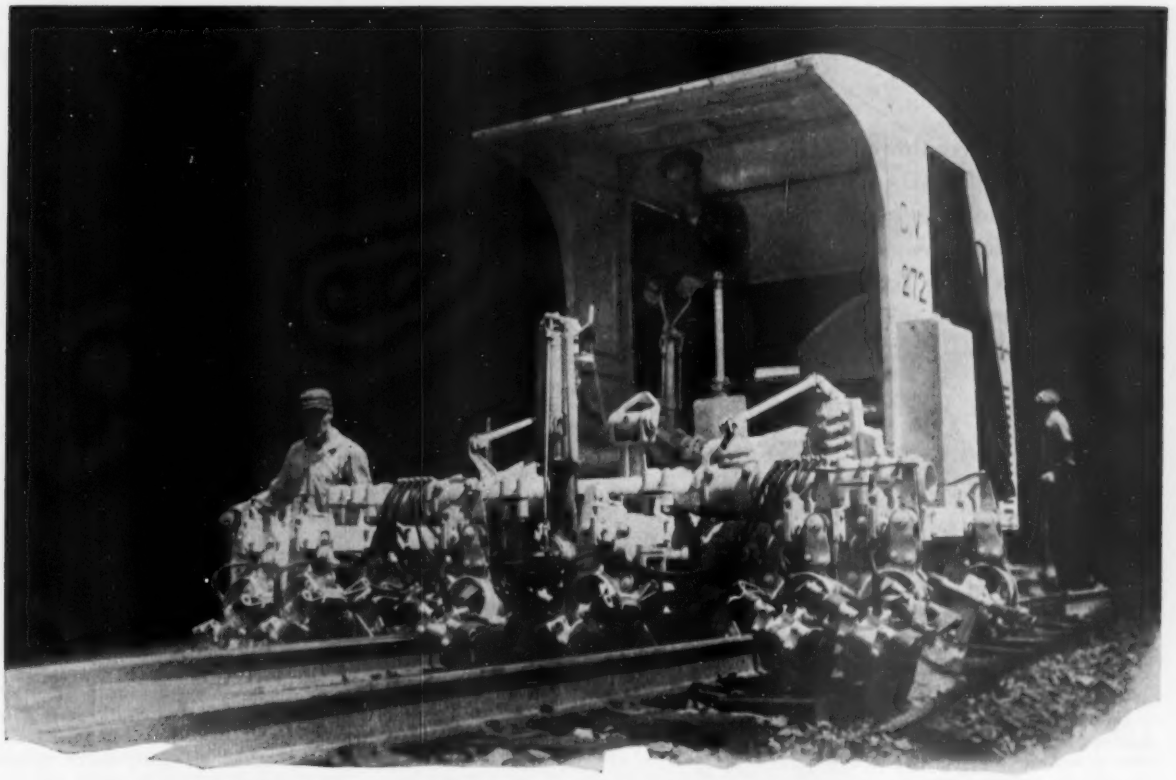
Authorizations

DENVER & RIO GRANDE WESTERN.—To abandon a 2.5-mile segment of branch line from Mustang, Colo., to Capers. The line served a clay mine, which has been abandoned.

NEW YORK, NEW HAVEN & HARTFORD.—To abandon a 1.05-mile segment of line at Easton, Mass. Division 4 said the "relatively small volume of traffic" in this rural area did not warrant continued operation of the line.

SYLVANIA CENTRAL.—To abandon its entire line, from Rocky Ford, Ga., to Sylvania, 14.7 miles. The SC is a wholly owned subsidiary of the Central of Georgia, but has been independently operated.

WESTERN MARYLAND.—To abandon a 3-mile segment of its so-called Waynesboro branch, in Washington county, Md. The segment has not been in use since January 1946.



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Questions and Answers FOR THE TRANSPORTATION DEPARTMENT

A good car distributor can save his road considerable per diem and car handling expense. What program do the railroads have for training personnel for this work, seniority rules being what they are?

●

CONDUCTED BY G. C. RANDALL, district manager, Car Service Division (ret.), Association of American Railroads, this column runs in alternate weekly news issues of this paper, and is devoted to authoritative answers to questions on transportation department matters. Questions on subjects concerning other departments will not be considered, unless they have a direct bearing on transportation functions. Readers are invited to submit questions, and, when so inclined, letters agreeing or disagreeing with our answers. Communications should be addressed to Question and Answer Editor, Railway Age, 30 Church Street, New York 7.

Experience—and practice—are the best teachers.

(1) We realize how important a good car distributor is. We have no definite program, other than having supervisory officers try to school our car distributors in the proper way to handle cars. Lately this has been quite a task because of the large turnover of employees. For instance, at Chicago in the past couple of years we have had a turnover of more than 350 car and yard clerks. With present seniority rules, about the time a man is well broken in on the car desk, a better job shows up, the car man bids in that job, and the task of teaching a new man starts all over again.—*C. A. Nummerdor, general superintendent transportation, Milwaukee.*

(2) The position of car distributor is excepted from assignment and displacement rules, and assignments to the job are made on basis of qualifications. Each distributor has an assistant.

While no one specific program of schooling is set up for car distribution personnel, the assistants, working under direct supervision of the car distributors, equip themselves for car distribution work by observing practices and policies administered. Five district car service agents, working out of the office of the general superintendent transportation . . . [help in the education of these men].—*R. E. Hallawell, general manager, Southern Pacific.*

(3) Car distribution has become more of a science with each passing year. A car distributor who can distribute available equipment to meet the varied requirements of modern railroading at the least possible per diem expense is a jewel. We attempt to keep all parties concerned with movement of cars conscious at all times of our obligation to have proper equipment available for loading where and when needed, without needless per diem or other costs caused by cross hauling, etc. We try to anticipate those who will definitely become car distributors, and by progressive education in these matters properly prepare them.—*D. M. Bender, superintendent transportation, Nickel Plate.*

QUIZ: How well do you know your demurrage rules?

See how many correct answers you can get to the following "quiz" questions. We'll give the correct answers in this column on April 26, and print the names of those sending in perfect replies.

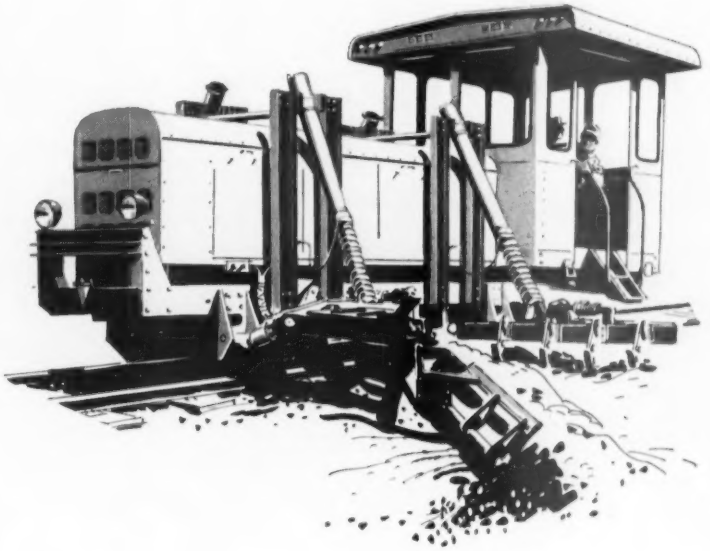
(1) James Smith, a contractor, was furnishing a considerable volume of building material for a housing project. He had no private siding, but found that the nearest railroad station had ample room on its public delivery track to take care of his unloading requirements. A written agreement was executed for the use of 10 car lengths of room on the team track. Smith told the railroad's agent that telephone advice of arrivals was entirely satisfactory, and that he would confirm this fact to him by letter. Everything went smoothly until a spell of bad weather prevented Smith from unloading promptly. Some $300 demurrage accrued on 25 cars before the jam was cleared. When the agent presented Smith with bills for this demurrage, Smith declined payment at first; then paid under protest, appealing the charges to the Interstate Commerce Commission, which sustained the protest and directed the railroad to refund to Smith the charges which had been collected. Why?

(2) John Jones ordered a small lot of feed from his regular supplier. He was advised that his goods were being loaded in the center of a stop-off car, with the balance of the load going to a destination beyond Jones' station. Via 'phone, Jones asked the railroad's agent to telephone him when the car arrived. The agent did so. Jones sent his truck to the team track and removed a truckload of the feed the same afternoon. However, a fire occurred at Jones' store that evening, and Jones did not get around to unloading the rest of his goods until some $18 of demurrage had accrued. Jones protested this charge, hiding behind the technicality that the agent had not given him a notice in writing of the car's arrival. Was Jones required to pay, and if so, why?

(3) Joe Brown received a notice of arrival from the agent of the New Haven, postmarked 3 p.m. Monday, stating that NH 31348 had arrived, consigned to him, and was being placed on a public delivery track. Brown went to the public delivery track the first thing Tuesday morning, but found that, for some reason, the car had not been placed yet. He was told that it would be placed within an hour or so. (It actually was placed by 11 a.m. Tuesday.) Brown, however, got busy with other matters and forgot about the car. It was not until the following Monday that the agent's force noticed that the car was still on hand under load, whereupon the agent telephoned Joe about it. Joe immediately sent a truck and unloaded the car that day. The agent presented a bill for demurrage for Friday and Monday, which Joe protested. Was he justified in this protest, and was he required to pay?

WHATEVER YOUR NEEDS FOR

ballast maintenance



Fairmont has the answer!

Performance ON THE JOB COUNTS

Ballast maintenance is, beyond all question, one of the most important and exacting tasks in the entire field of railway maintenance. Fairmont, in keeping with its tradition of providing the proper equipment for every maintenance job, designs and manufactures a wide variety of products expressly for this assignment. Shown here is the most significant of these—the W77 Series A Ballast Maintenance Car. Powered by a dependable 112-h.p. engine with eight speeds and a two-way, four-wheel drive, this unit offers the finest method yet devised for maintaining road-bed ballast. By mounting various tools on the hydraulically-operated tool frame of the W77 Series A, it is possible to handle the entire ballast maintenance operation quickly, easily and economically. These tools are shown and described in the panel below, along with a tool car which has been specially designed for use with this unit. In its thoroughness, its efficiency and its speed of operation, the W77 Series A is convincing proof that for ballast maintenance—as for every other responsibility of railway maintenance—you should always look to Fairmont!

FAIRMONT RAILWAY MOTORS, INC., FAIRMONT, MINNESOTA

SCARIFIERS break up foul, compacted shoulder ballast, remove mud dams, restore drainage, and serve as the lead tool for discs, 10-foot blades and ballast box.

76-INCH BLADES serves to strike off or re-shape the berm for better drainage and appearance. This tool also assists in bringing the subgrade elevation up to standard.

BALLAST EQUALIZING BOX equalizes and correctly shapes old or new shoulder ballast. The box can be hydraulically turned to operate in either direction.

DISCS break up clods and clumps of foul ballast to improve drainage and appearance. They also aid in re-shaping the shoulder where ballast is well distributed.

CENTER PLOWING EQUIPMENT is used to move ballast from between the rails out to the shoulders during re-ballasting. Wing blades move ballast off ends of the ties.

TOOL CAR, which connects with the W77 Series A, holds tool attachments. A crane at the front helps change tools, while rear cab houses the pilot train crew.

MANUFACTURERS OF INSPECTION, SECTION AND GANG CARS, HY-RAIL CARS, MOTOR CAR ENGINES, PUSH CARS AND TRAILERS, WHEELS, AXLES AND BEARINGS, BALLAST MAINTENANCE CARS, DERRICK CARS, OIL SPRAY CARS, GROUTING OUTFITS, TIE RENEWAL EQUIPMENT, RAIL RENEWAL EQUIPMENT, WEED CONTROL EQUIPMENT.

Now SATCO-LINED JOURNAL BEARINGS

MAKE NEW RECORDS IN FREIGHT SERVICE, TOO!

Santa Fe

Santa Fe Puts 1000 Refrigerator Cars on LOW COST SATCO—with only 14 removals (including wheel changes) in 26,000,000 miles

Putting Satco-lined journal bearings on freight cars costs only about $3.00 more per car. That's a very low price for the premium performance you can get.

On the Santa Fe, in November, 1952, 1000 "reefers" were put on Satco — part of the big progressive improvement program for "America's New Railroad." After one full year (including one of the hottest summers on record) these 1000 reefers had accumulated 26,000,000 car miles with a total of only 14 bearing removals. Some of the 14 removals had to be made because of wheel changes that require new bearings whether the old ones have worn or not. *And the Santa Fe is still getting the same top quality performance.*

Why Satco Bearings are Better

Satco proved itself on passenger cars and locomotives years ago. Now it's making records in freight service, too. The reasons: Satco has a melting point 150°F. higher than standard AAR babbitt. That means a harder and stronger bearing at high temperatures. In the laboratory and in service, Satco-lined bearings have actually been run under full load at temperatures of 400°F. and over, without ill effect. When you consider that normally the bearings operate at temperatures about 100°F. above atmospheric, the big extra margin of safety you get with Satco is apparent.

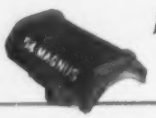
More Satco for the Santa Fe

This extensive freight car application has been so satisfactory that now the Santa Fe plans to put 500 box cars on Satco-lined bearings. Other roads are freight-testing Satco, too, with hopper cars, cement cars, and other types already in service.

Ask us to give you the facts and figures about Satco lining metal and what it can do to improve your freight car performance. Just write to Magnus Metal Corporation, 111 Broadway, New York 6; or 80 E. Jackson Blvd., Chicago 4.

MAGNUS

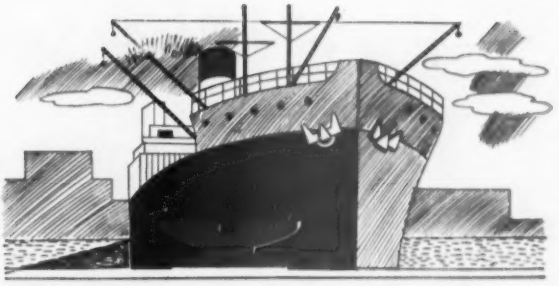
Solid Bearings

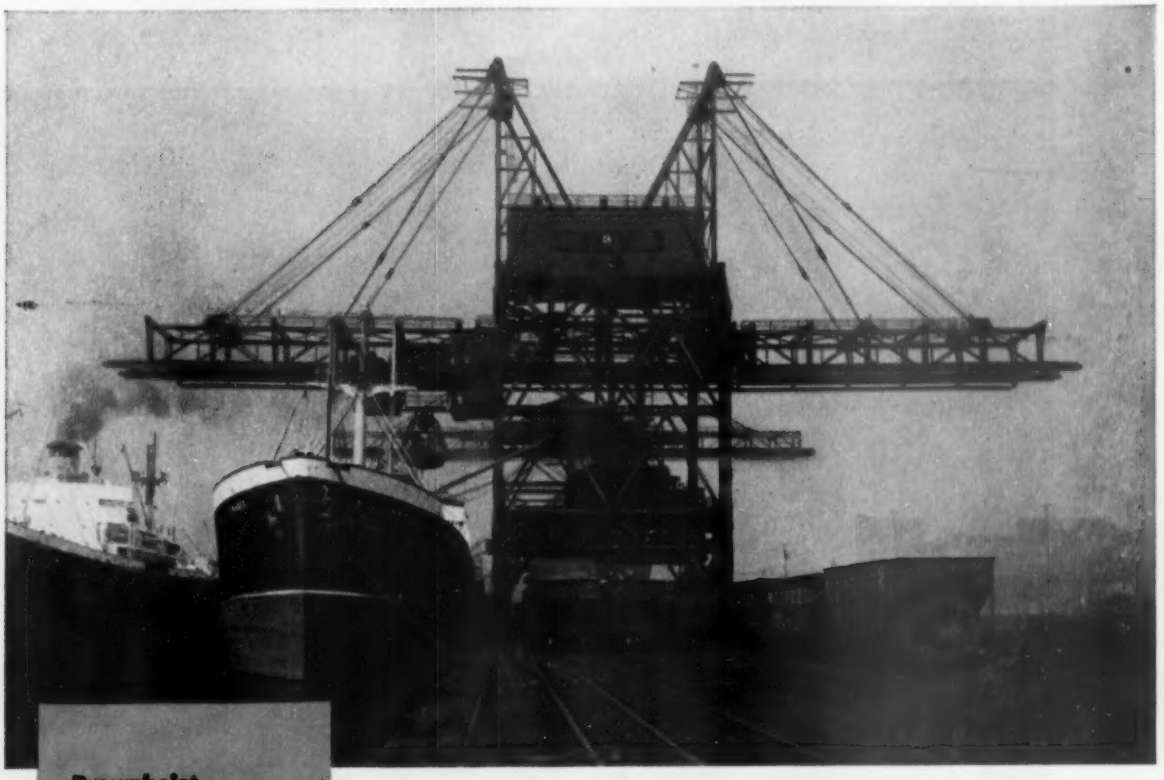


Right for Railroads
...in performance...in cost

MAGNUS METAL CORPORATION *Subsidiary of* **NATIONAL LEAD COMPANY**

you can't show a profit while the cargo's in the boat





Brownhoist equipment speeds material handling in ports all over the world

There's no profit in a shipment of bulk cargo until you get it out of the boat and put it to work for you. The quicker and cheaper you can do this, the bigger your profit will be. BROWNHOIST builds a variety of special equipment for handling bulk materials in large quantities rapidly and efficiently. The 15 gross ton boat unloader you see here, for example, can unload 1200 tons of ore an hour. It has a reach of 70 feet from the face of the dock on either side. The unloader is equipped with adjustable voltage control which gives extremely smooth operation and maximum production. BROWNHOIST also builds traveling bridge cranes, fast plants, storage bridges, car dumpers, locomotive cranes and clamshell buckets. Each machine is specifically engineered to do the job it is designed for as quickly and as economically as possible. For information about BROWNHOIST equipment to meet your requirements, consult your nearest BROWNHOIST representative or write us today.

BROWNHOIST

builds better cranes

175

CLAMSHELL BUCKET

250 TON WRECKING CRANE

COAL-ORE BRIDGE

CAR DUMPER

INDUSTRIAL BROWNHOIST CORPORATION • BAY CITY, MICHIGAN • DISTRICT OFFICES: New York, Philadelphia, Cleveland, San Francisco, Chicago, Montreal, Q. • AGENCIES: Detroit, Birmingham, Houston, Los Angeles

How Alco Repair Services Save You Time and Money

Announcing: A NEW

ALCO FACTORY REPAIR-REBUILD SERVICE at Schenectady, N. Y., returns locomotives and parts—including electrical components—in top condition at low cost . . . helps railroads make the most of the profit-building potential inherent in your Alco diesel-electric locomotives.

Alco AMERICAN

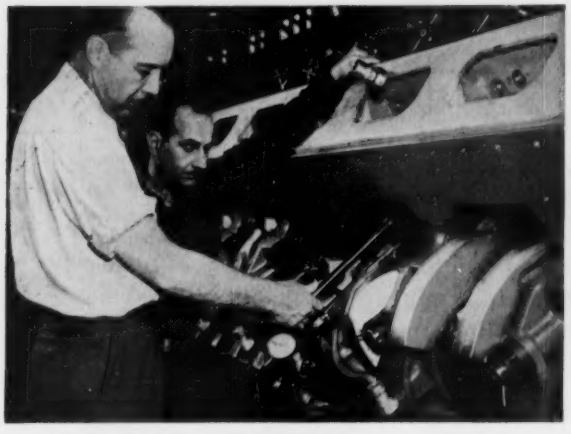
REPAIR SERVICE FOR LOCOMOTIVES
NOW AVAILABLE AT ALCO'S SCHENECTADY PLANT

To help the railroads continue to get the most out of their diesel-electric locomotives—*without costly investment in major repair facilities and manpower*—American Locomotive Company has established at its Schenectady plant a complete new service for the repair, rebuild, and modernization of entire locomotives as well as component parts.

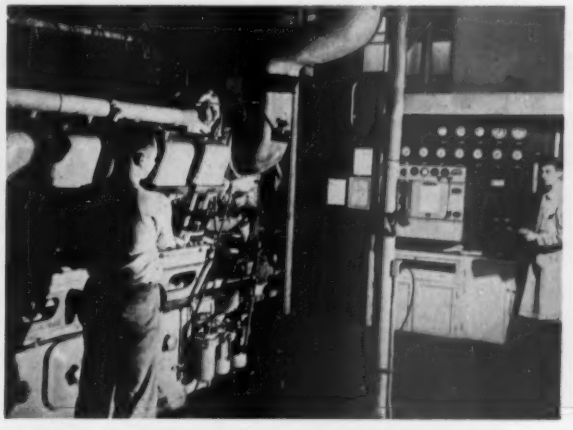
Alco Factory Repair-Rebuild Service makes full use of the same machinery, tools and inspection equipment employed for volume production of new Alco locomotives and parts, thus giving you a *fully integrated repair service with a single responsibility.* And in addition . . . Alco offers you *improved unit exchange* service—through its Schenectady and regional warehouses—providing you with like-new "rebuilds" in exchange for your worn-out parts.

This Schenectady Repair-Rebuild Service gives you

- ★ **Original manufacturer's complete engineering and design facilities—*plus* advanced techniques and *proved* experience.**
- ★ **Genuine Alco renewal parts with full warranty.**
- ★ **Skilled workmanship and quality control for better performance and protection.**



SPECIAL FEATURES of Alco Factory Repair-Rebuild Service include strict inspection by factory craftsmen in accordance with new-equipment specifications.



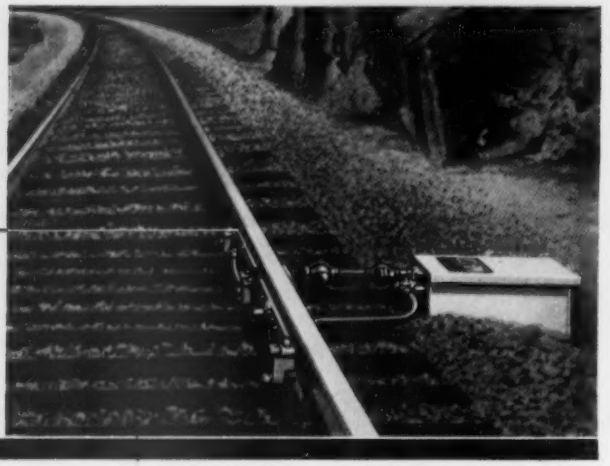
PRODUCTION AND TESTING FACILITIES used for new locomotive manufacture are also utilized for rebuild service—further assurance of many more miles of dependable performance from your rebuilt locomotives.

LOCOMOTIVE COMPANY Sales and Service Offices in Principal Cities

lubricates rail and wheel flanges

MECO

TYLIFE—a treatment which bonds spikes or tie plugs firmly into old spike holes—also bonds spikes into new, prebored holes.



MECO RAIL LAYERS—lay standard rails, long rails, continuous welded rail efficiently and economically.

MACK SWITCH POINT PROTECTORS prolong life of switch rails 4 to 5 times on first application, then are removed, reversed and reapplied for more extended switch rail life.

Meco Curve Rail and Flange Lubricators

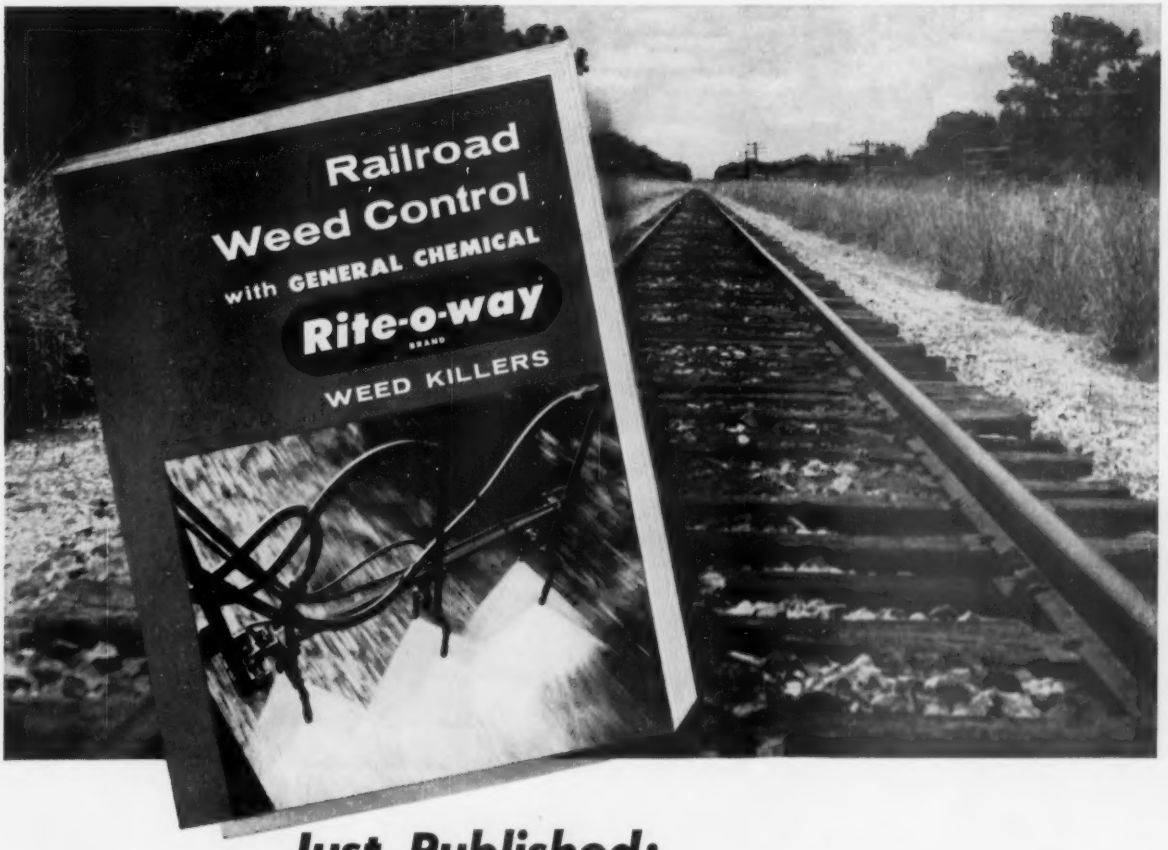
Meco Lubricators apply grease between wheel flanges and the rail head, reducing friction and wear on both rails and wheels.

This makes it possible to negotiate curves at higher speeds safely and lenghtens life of both wheels and curve rails. Result—longer life for curve rails and more miles between locomotive wheel flange turnings.

Maintenance Equipment Company

RAILWAY EXCHANGE BUILDING • CHICAGO 4, ILLINOIS

RYD-IN AUTOMATIC COUPLERS—couple trailers to motor cars rapidly and safely.



Just Published:

RAILROAD WEED CONTROL WITH GENERAL CHEMICAL Rite-o-way BRAND Weed Killers

Yours for the asking!

This new brochure shows you in word and picture what General Chemical regards as the most up-to-date, complete and versatile Railroad Weed Control Service ever offered to the Railroad Industry.

It tells you all about General's two outstanding weed control materials that cut costs and give better results because they're *double strength* for fast action, higher kill and longer protection: "Rite-o-Way" Brand TCA-Chlorate (for spray-train application on the big jobs) and "Rite-o-Way" Brand Sta-Klor* (a spray powder for dry or wet application by your regular labor crews in general maintenance work).

Make certain you'll use the best available materials and methods in your 1954 weed control program. Write now for this fast-reading, informative booklet.

*General Chemical Trade-Mark

GENERAL CHEMICAL WEED CONTROL

Weed Killer Department
GENERAL CHEMICAL DIVISION
Allied Chemical & Dye Corporation
40 Rector Street, New York 6, N. Y.

Tells How You Can Get Clean Track Quickly Plus Reduced Root Growth That Lowers Your Maintenance Costs.

Weed Killer Department
GENERAL CHEMICAL DIVISION
Allied Chemical & Dye Corporation
40 Rector Street, New York 6, N. Y.

GC Allied Chemical

Please send me your new booklet on Railroad Weed Control with "Rite-O-Way" Brand Weed Killers.

Name_____

Title_____

Railroad_____

Address_____

City_____ State_____ RA-3

CHEMICAL PROGRESS WEEK • May 17 to 22 • *A Better America Through Chemical Progress*

IT'S TIME TO COMPARE
TRACK MAINTENANCE
METHODS AND RESULTS

The swing to modern railroad equipment and faster schedules has put a new spotlight on track maintenance.

Millions of dollars have been spent by the railroads to better serve the country's transportation needs. In the drive for greater revenue, new, more economical motive power and cars of many types are rapidly replacing outmoded, uneconomical rolling stock.

Under today's operating conditions, more and more railroad managements are turning their attention to what is *under* the rails in addition to what rides *on* them. That is why it is wise to compare track maintenance methods and equipment right now. Why it will pay to find out *all* about the Pullman-Standard Power Track Maintenance Equipment shown on the next page.

T. Y. GEHR, Manager
Pullman-Standard Track
Equipment Department

R. C. CALDWELL
Sales Representative

F. T. GRANT
Sales Representative

W. E. PORTER
Commercial Engineering
and Field Service Section

J. M. DUBOIS
Manager Track Equipment
Spare Parts Sales

W. H. KNIPPLE
Manager Track Equipment
Engineering Section

H. J. PEAKER
Eastern District
Field Service Engineer

H. J. DUMICH
Western District
Field Service Engineer

These Men Have FACTS For You

Find out now why Pullman-Standard Track Maintenance Equipment has been able to establish new records for speed and economy.

Look over the engineering and construction details of this Power Track Maintenance Equipment and see why maintenance costs are so low.

Compare the P-S Power Ballaster, Power Cribber or Power Cleaner with any other available equipment and see why, mile after mile and year after year, these Pullman-Standard built units can assure better, faster, lower cost track maintenance. A Pullman-Standard representative will be glad to give you *all* the facts.

YOUR NEEDS CREATE THE PULLMAN "STANDARD"

PULLMAN-STANDARD

CAR MANUFACTURING COMPANY

SUBSIDIARY OF PULLMAN INCORPORATED

79 EAST ADAMS STREET, CHICAGO 3, ILLINOIS

BIRMINGHAM, PITTSBURGH, NEW YORK, SAN FRANCISCO, WASHINGTON

PULLMAN-STANDARD

Power Ballaster

With a production rate of 500 to 700 feet an hour, a Pullman-Standard Power Ballaster, run by a single operator, can be efficiently manned by a crew of 10 to 15 men. Case history studies made on 14 railroads prove that this unit will give more feet of finished tamped track per hour, with less labor and maintenance, than any other production tamper.

PULLMAN-STANDARD

Power Cleaner

and Winch Car Team

For the first time both track shoulders can be cleaned simultaneously at 1000 to 1200 feet per hour with only four men. Even in multiple track territory, the shoulder plus half the six-foot are cleaned to a depth of eight to ten inches below the tie base at the same high rate and with the same low labor complement. Your ballast cleaning costs can be reduced by as much as 50%.

PULLMAN-STANDARD

Power Cribber

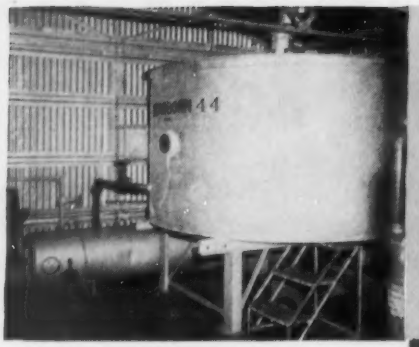
The Pullman-Standard Power Track Cribber gives you two cribs a minute, with a single operator. With a normal production rate of 100 to 225 track-feet per hour, its interchangeable 4-, 5-, and 6-inch digger tips enable it to crib efficiently and economically in any type of ballast, regardless of cementation.

Dearborn

DUAL CLEANING SYSTEMS

JOB ENGINEERED

designed to give you
the best possible cleaning job
at the lowest unit cost.



Clean with safety. Dearborn cleaning equipment for measuring, mixing, distributing and applying cleaning materials at controlled concentration.

Is your cleaning plant producing efficient results? If not, a Dearborn "job-designed" system can be the answer.

YOUR WATER SUPPLY—does the rinse water leave a noticeable residue after evaporation? Dearborn laboratories can help offset this with corrective water conditioning and a specific cleaner.

LOCAL CONDITIONS—such as track layout, existing equipment and available labor are other factors that determine the economy of your cleaning plant performance. Here, too, Dearborn "job-designed" systems—prefabricated buildings, chemical mixing vats and special pressure pumps—assure better cleaning performance at low cost.

Write for your copy of Bulletin 6000.

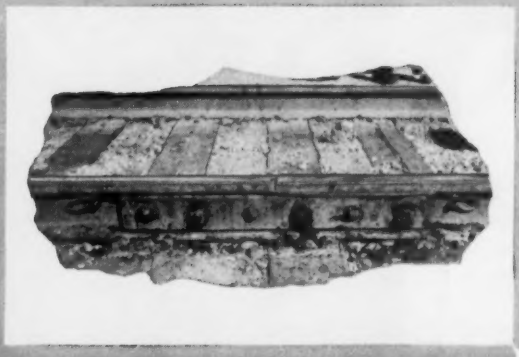
DEARBORN CLEANER 92 leads the field as a safe, efficient cleaner for all electrical equipment, whether bench work, control cabinets, motors or generators. High flash point—rapid drying time—low order toxicity are a few of its advantages

Dearborn

COMBATTING CORROSION
EVERYWHERE SINCE 1887

DEARBORN CHEMICAL COMPANY · Merchandise Mart Plaza, Chicago 54, Illinois

WHEN THIS HAPPENS, *it costs you money*

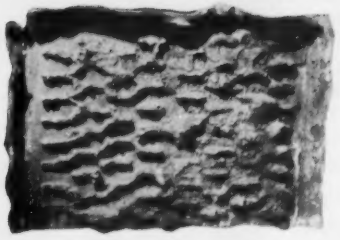


RAIL JOINTS

Preventive maintenance costs less than rail and joint replacement—less in labor and materials. The remedy is simple—one-coat NO-OX-ID does the job. Remove rust scale, then coat with NO-OX-ID to cut maintenance costs on railroads. Write for Bulletin 3077.

BRIDGES

Replacing rust-ruined steel bridge members is expensive. NO-OX-ID Rust Preventives stop corrosion—conserve materials and man-hours. Wherever steel is used—on railroad bridges, water tanks, structures, tracks, signals, pipeline—NO-OX-ID prevents rust and corrosion. Send for informative NO-OX-ID literature.



End view of Diesel radiator section showing tubes completely plugged.

DIESEL COOLING WATER

Untreated cooling water did this. Diesel manufacturers now recommend the proper treatment of the Diesel cooling water to protect valuable equipment. Dearborn can help you by (1) analyzing your raw water characteristics (2) supplying a De-Ionizing or Zeolite system of the right capacity (3) recommending the required finishing treatment. Send for descriptive literature.

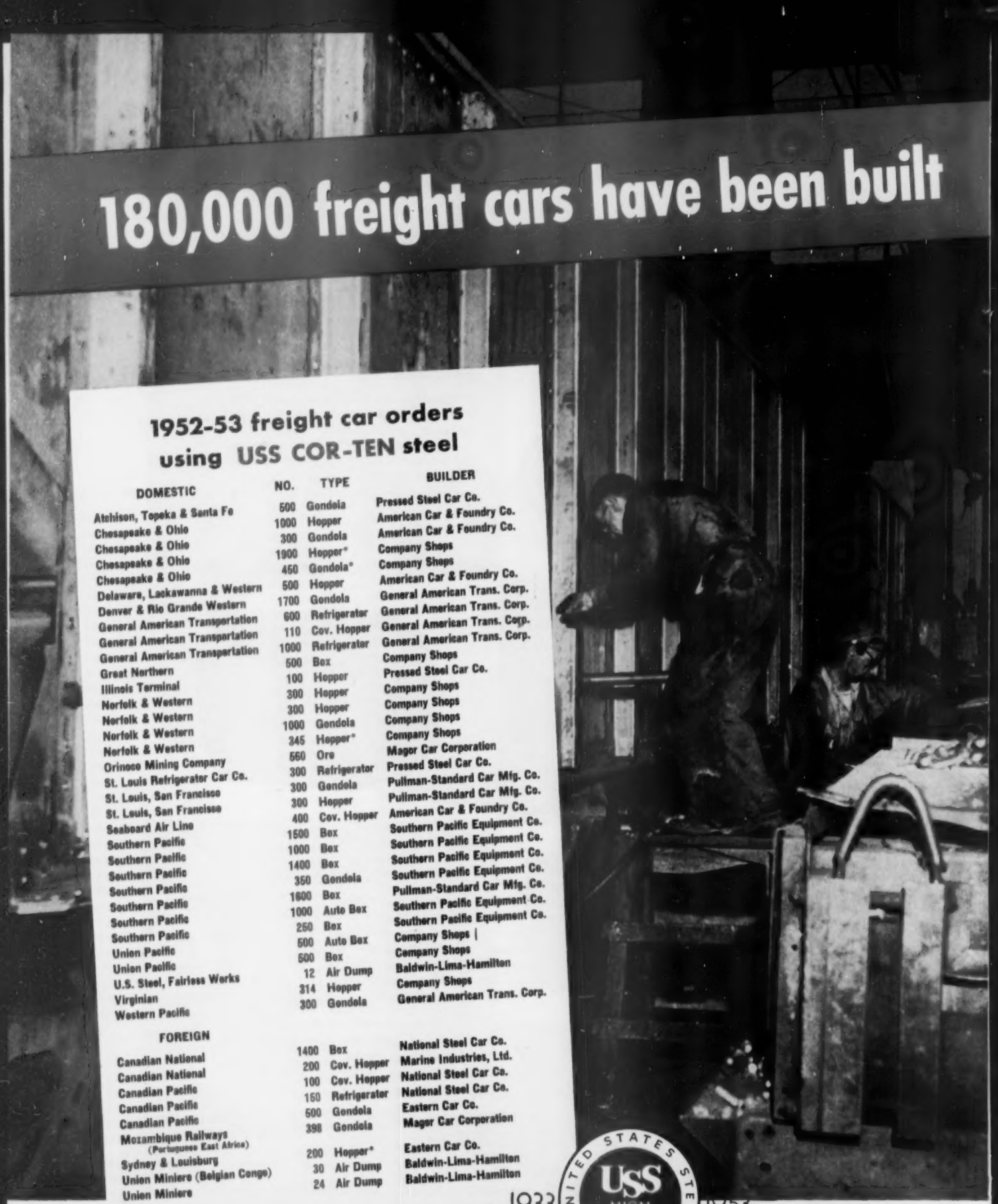
Dearborn's **working on the railroad . . .**

to reduce maintenance cost from shop to terminal. Many leading railroads everywhere rely on Dearborn NO-OX-ID rust preventives; Dearborn's railroad cleaners; Diesel cooling water treatments; Dearborn's De-Ionizing and Zeolite systems.

consult your ***Dearborn*** *field representative—*

His broad railroad experience plus Dearborn's extensive laboratory and research facilities are at your service . . . without obligation.

180,000 freight cars have been built



1952-53 freight car orders using USS COR-TEN steel

DOMESTIC	NO.	TYPE	BUILDER
Atchison, Topeka & Santa Fe	500	Gondola	Pressed Steel Car Co.
Chesapeake & Ohio	1000	Hopper	American Car & Foundry Co.
Chesapeake & Ohio	300	Gondola	American Car & Foundry Co.
Chesapeake & Ohio	1900	Hopper*	Company Shops
Chesapeake & Ohio	450	Gondola*	Company Shops
Delaware, Lackawanna & Western	500	Hopper	American Car & Foundry Co.
Denver & Rio Grande Western	1700	Gondola	General American Trans. Corp.
General American Transportation	600	Refrigerator	General American Trans. Corp.
General American Transportation	110	Cov. Hopper	General American Trans. Corp.
General American Transportation	1000	Refrigerator	General American Trans. Corp.
Great Northern	500	Box	Company Shops
Illinois Terminal	100	Hopper	Pressed Steel Car Co.
Norfolk & Western	300	Hopper	Company Shops
Norfolk & Western	300	Hopper	Company Shops
Norfolk & Western	1000	Gondola	Company Shops
Norfolk & Western	345	Hopper*	Company Shops
Orinoco Mining Company	560	Ore	Magor Car Corporation
St. Louis Refrigerator Car Co.	300	Refrigerator	Pressed Steel Car Co.
St. Louis, San Francisco	300	Gondola	Pullman-Standard Car Mfg. Co.
St. Louis, San Francisco	300	Hopper	Pullman-Standard Car Mfg. Co.
Seaboard Air Line	400	Cov. Hopper	American Car & Foundry Co.
Southern Pacific	1500	Box	Southern Pacific Equipment Co.
Southern Pacific	1000	Box	Southern Pacific Equipment Co.
Southern Pacific	1400	Box	Southern Pacific Equipment Co.
Southern Pacific	350	Gondola	Southern Pacific Equipment Co.
Southern Pacific	1600	Box	Pullman-Standard Car Mfg. Co.
Southern Pacific	1000	Auto Box	Southern Pacific Equipment Co.
Southern Pacific	250	Box	Southern Pacific Equipment Co.
Union Pacific	500	Auto Box	Company Shops
Union Pacific	500	Box	Company Shops
U.S. Steel, Fairless Works	12	Air Dump	Baldwin-Lima-Hamilton
Virginian	314	Hopper	Company Shops
Western Pacific	300	Gondola	General American Trans. Corp.
FOREIGN			
Canadian National	1400	Box	National Steel Car Co.
Canadian National	200	Cov. Hopper	Marine Industries, Ltd.
Canadian Pacific	100	Cov. Hopper	National Steel Car Co.
Canadian Pacific	150	Refrigerator	National Steel Car Co.
Canadian Pacific	500	Gondola	Eastern Car Co.
Mozambique Railways (Portuguese East Africa)	398	Gondola	Magor Car Corporation
Sydney & Louisburg	200	Hopper*	Eastern Car Co.
Union Miniere (Belgian Congo)	30	Air Dump	Baldwin-Lima-Hamilton
Union Miniere	24	Air Dump	Baldwin-Lima-Hamilton

*Rebuilt

1933 UNITED STATES STEEL USS HIGH STRENGTH STEELS 1953

TWENTY YEARS OF PERFORMANCE

USS HIGH STRENGTH STEEL

better with USS COR-TEN steel since 1933

IN THE LAST TWO YEARS, ORDERS HAVE BEEN PLACED FOR

22,000 freight cars

built with USS COR-TEN steel

● Look at this long list of recent orders for freight cars built with USS COR-TEN steel. Twenty-two railroads and other car users are represented here. Only four of them are using COR-TEN steel construction for the first time. The rest have had years of experience with equipment made of COR-TEN steel.

For example, the Chesapeake & Ohio, Seaboard Air Line and Union Pacific have been cutting operating and upkeep costs with COR-TEN steel cars for as long as 20 years. Among the first to put this superior steel to work, these three railroads have from time to time, since 1934, added to their original COR-TEN steel equipment and among them have now in service a total of over 32,000 cars of COR-TEN steel construction.

Their experience is typical. In other words, most of the orders now being placed for COR-TEN steel cars are *repeat* orders.

We emphasize this because it highlights the important fact that COR-TEN steel construction is bought again and again. And for good reason. Many years of superior service performance have proved that the high strength and high corrosion resistance of COR-TEN steel pay off in substantially reduced maintenance costs.

Today, many of the major railroads in America have considerable numbers of USS COR-TEN steel cars on their lines. In fact, more than 180,000 of these money-saving cars are now in service.

So satisfactory has been the performance of this equipment that not only here, but in Canada, in South and Central America and even in Africa, among cost-conscious railroad men, COR-TEN steel construction has come to mean "The best in freight car equipment."

UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND • COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
NATIONAL TUBE DIVISION, PITTSBURGH • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. • UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

4-698

UNITED STATES STEEL

NEW BAKER gas-O-matic

TRADE MARK

. . . ELECTRIC TRUCK OPERATING ECONOMY
. . . . . GAS TRUCK INITIAL COST!

gas-O-matic has the smoothest acceleration and best "inching" characteristics of any fork truck, regardless of type of fuel or transmission. It is ideal for ramp work, for tiering, and for long or short haul operations. In fact it will perform almost any fork truck job better and cheaper.

gas-O-matic is a revolutionary new gasoline-powered fork truck with electric motor drive—designed from engine to drive wheels to incorporate the best features of both gas and electric trucks.

The secret of its outstanding performance and amazing operating economy is the new Baker GAS-O-MATIC transmission system. A specially designed variable voltage generator provides an incredibly smooth *unbroken* acceleration curve—directly controlled by the gas throttle.

ELIMINATION OF CLUTCH cures the biggest maintenance headache of gas-powered trucks.

ELIMINATION OF CLUTCH AND GEAR SHIFT prevents jerky starts and "step-ladder" acceleration.

ELIMINATION OF CONTROLLER AND RESISTANCE BANKS of electric and gas-electric trucks means fewer moving parts and results in less down time and lower maintenance costs.

gas-O-matic will do everything a comparable straight gas truck can do—do most of it better and more economically . . . plus some things that straight gas cannot do.

It will do almost everything a battery-powered fork truck can do—and some of it better . . . plus a few things that battery-power cannot do!

—Yet it costs little more than a straight gas truck of the same capacity, and only about half as much as a battery-powered electric with charger and two batteries!

INDUSTRIAL Baker TRUCKS

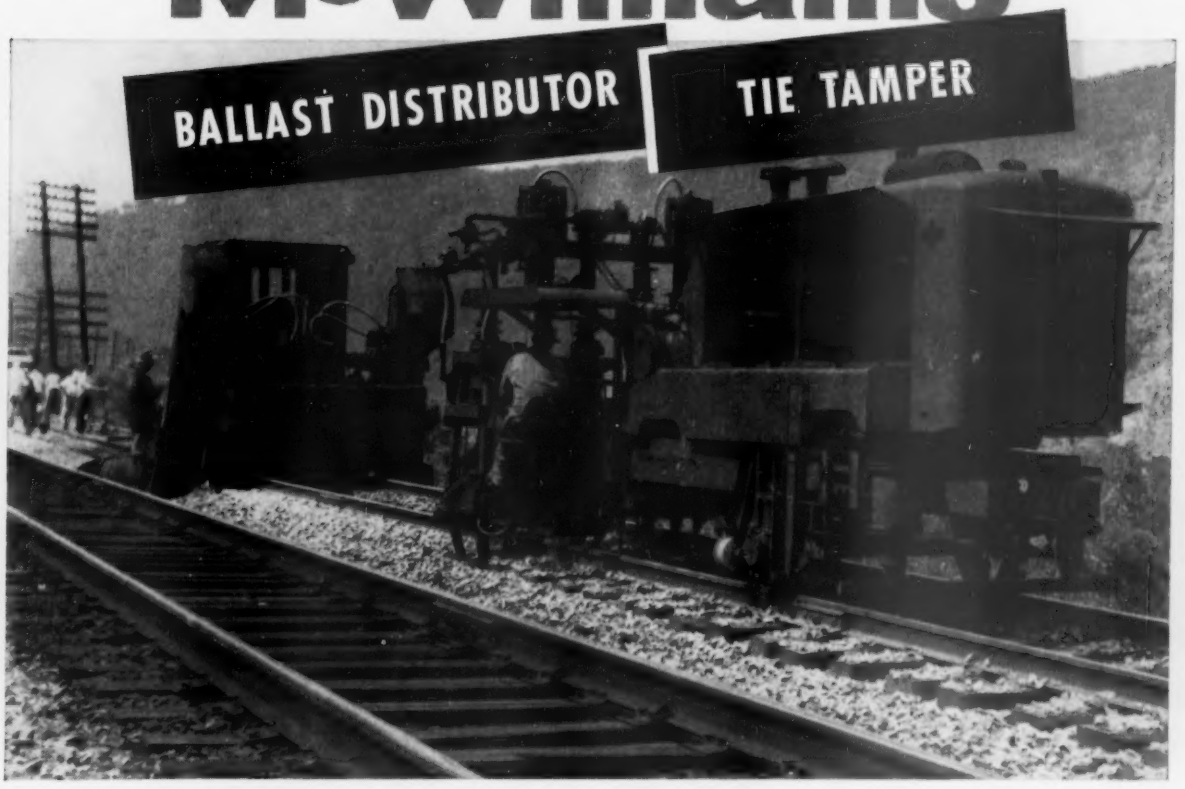
write for descriptive Bulletin No. 1344

THE BAKER-RAULANG COMPANY
1255 WEST 80th STREET • CLEVELAND 2, OHIO

The Baker-Lull Corporation, Subsidiary, Minneapolis, Minnesota
Material Handling and Construction Equipment

Baker
industrial trucks

McWilliams



This Team Makes the Best Track

. . at the lowest cost

These two machines assure the best surfaced track . . . at a cost lower than that of all other mechanical and hand methods. The McWilliams Ballast Distributor saves from 30 to 40 men by eliminating all hand forking. It picks up ballast from inter-track and shoulder spaces and places it in the proper quantity exactly where it is needed for tamping. Its companion machine, the McWilliams Tie Tamper, now features a new 600 foot compressor which has made possible a 40% increase in tamping speed.

McWILLIAMS BALLAST DISTRIBUTOR
Tie renewal is made without interference from ballast distributed in the track ahead of the gang.

McWILLIAMS TIE TAMPER
Using the least labor, it operates at from 575 to 625 feet per hour of perfectly tamped track.

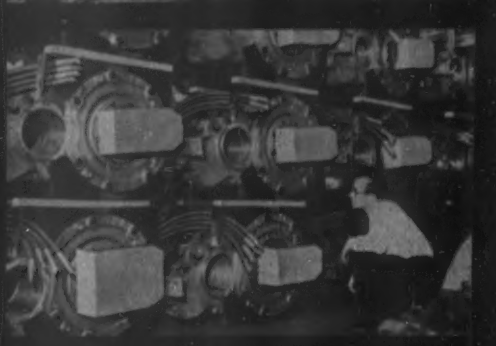
Railway Maintenance Corporation

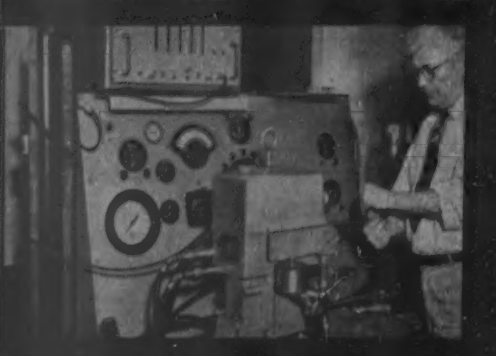
PITTSBURGH 30, PA.

Designers and Manufacturers of: McWILLIAMS MOLE AND SUPER MOLE . . . McWILLIAMS TIE TAMPER, CRIB CLEANER AND BALLAST DISTRIBUTOR . . . R. M. C. TIE REPLACER

Bigger **BRANCH**

Better **SERVICE**





Jacksonville, Florida Branch Tripled in Size

Complete Engine Remanufacturing Facilities Added

TO GIVE Southeastern railroads faster, more complete Unit Exchange service, Electro-Motive has tripled the size of its Jacksonville Factory Branch and added new production-line facilities for remanufacture and *modernization* of General Motors locomotive components.

These facilities—now installed and in operation—include machinery for factory rebuilding complete engines as well as injectors, traction motors, main generators and other major components. Electro-Motive's investment in these facilities saves railroads the necessity of making similar large capital expenditures.

Expansion of the Jacksonville Factory Branch is part of Electro-Motive's continuing Unit Exchange program to keep pace with the ever-growing needs of America's railroads. Six Factory Branches are currently in operation at strategic railroad centers across the country. This year, a seventh branch will be opened at Salt Lake City, Utah.

If you're in Jacksonville, drop into our Factory Branch and see for yourself the efficient production-line remanufacturing methods used. They're saving railroads many thousands of dollars every year by supplying better rebuilds, faster, at lower cost.

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS

La Grange, Illinois • Home of the Diesel Locomotive

GENERAL MOTORS LOCOMOTIVES

Cutting berm ditch along mainline right-of-way near Chillicothe, Illinois, D Tournapull self-loads root-laced clay . . . heaps up to 5 cu. yds. in less than a minute. With speeds to 28 m.p.h., the one "D" and its one operator completed this ditching job fast, and at a much lower cost than with former methods. "D" eliminated need for a work train and crew.

At approach of traffic "D" drives up on bank. As soon as the line is clear, rig will go back to work. No time is lost deadheading work trains to nearest siding . . . through-traffic is not delayed. Multi-disc 4-wheel air brakes hold rig safely on steep side slope.

Self-powered moves at speeds to 28 m.p.h. save delays, get more work done. With big low-pressure rubber tires, Tournapull drives along right-of-way without damage to ties or tracks. Simplifies dispatching . . . saves time of loading and unloading . . . goes right to work.

At stockpile, "D" uses its bulldozer blade to side-cast screened rock to level a loading course. Electric-control blade gives fast, smooth dozing action. Rig has plenty of power (122 h.p.) and maneuverability (90° turns in 12′ 9″ radius) to speed dozing.

LeTourneau-Westinghouse Company PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

HOW

Your railroad can cut costs with TOURNAPULLS

Sloping 4-to-1 bank, "D" dozes topsoil from hillside cut. Other jobs . . . *repairing washouts . . . stockpiling coal . . . clearing slides . . . plowing snow . . . clearing right-of-way.* Write for job-proved data on your type of work . . . or, see your LeTourneau Distributor.

Spreading ballast, "D" distributes even layers from 1" to 10" deep . . . can also pile entire load in one spot. Here, operator will later level ballast by lowering bulldozer blade to "float" on the rails and act as depth shoe. 8' 1" blade easily covers gauge of tracks.

Self-loading ballast, Tournapull gets about 4½ cu. yds. of 1½" rock per load. Power-proportioning differential, which applies 4 times the power to wheel on firmest footing, keeps "D" pulling through loose, soft, or slippery material . . . reduces downtime for weather.

Turning 90° in radius of 12' 9", "D" moves into position for spreading. Rig crosses tracks without blocking . . . does no damage to rails, switches, etc. Big 18.00 x 25 tires deflect load evenly over obstructions . . . do not chamfer ties, trip or damage block signals.

Loading from hopper, Tournapull's square top opening speeds handling. Wash water drains freely from bottom of scraper . . . eliminates hauling unnecessary weight. Rig also can be loaded by shovel or dragline . . . speeds both long and short haul operations.

Tournapull, Tournadozer—Trademark Reg. U. S. Pat. Off. DP-155-RR

Send now to: **LeTOURNEAU-WESTINGHOUSE CO., *Peoria, Illinois***

Name_____ Title_____

Company_____

Street_____ City_____ State_____

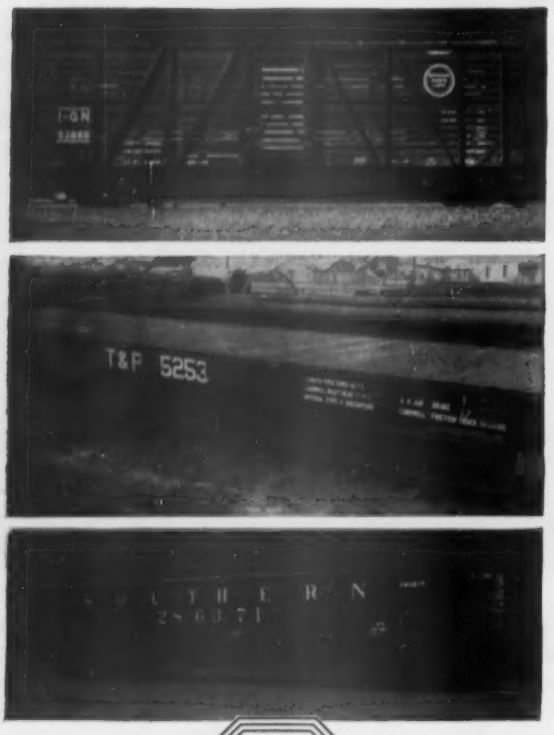
☐ Please tell us more about 9-ton, 122 h.p. D Tournapull. ☐ Also send data on 19 m.p.h., 186 h.p. rubber-tired Tournatractor.

DP-155-RR

THE MISSOURI, KANSAS & TEXAS
THE ERIE
THE MISSOURI PACIFIC
THE CHESAPEAKE & OHIO
THE BALTIMORE & OHIO
THE ROCK ISLAND
THE DENVER & RIO GRANDE WESTERN
THE SOUTHERN
THE GULF COAST LINES
THE NICKEL PLATE

Ask these roads about the convenience of Koppers Service on car lumber

THE PENNSYLVANIA
THE BOSTON & MAINE
THE LOUISVILLE & NASHVILLE
THE WESTERN MARYLAND
THE ILLINOIS CENTRAL
THE PITTSBURGH & WEST VIRGINIA
THE TEXAS & PACIFIC
THE SEABOARD AIR LINE
THE GREAT NORTHERN



• Maximum saving from the use of pressure-treated car lumber depends on careful planning. Koppers service can help you to match your needs with supply, at the right time in the right place.

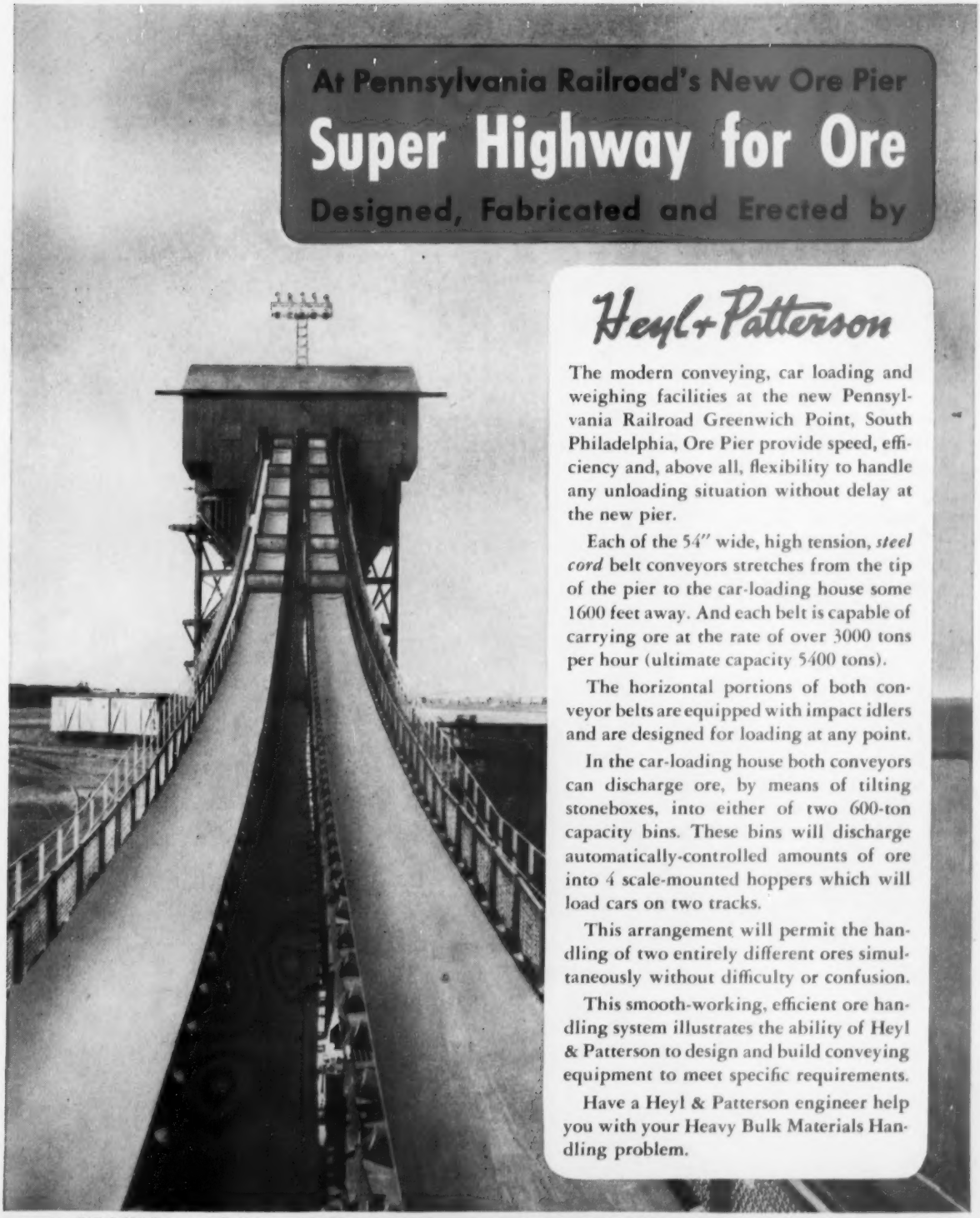
Typical of the facilities to service car lumber requirements are the many Koppers plants equipped for pressure treatment not only with creosote, but also with other approved preservatives which are particularly suited to car lumber applications. The availability of a complete range of preservatives insures you of just the right treatment for each of your lumber applications.

A careful study of your shop locations, lumber stocks and buying practices may indicate important additional savings in the use of car lumber. Such an analysis could be furnished without obligation by Koppers Technical Department. Please address your request to Mr. Ralph Bescher, Wood Preserving Division, Koppers Company, Inc., Orrville, Ohio.

KOPPERS COMPANY, INC. • Pittsburgh 19, Pa.

KOPPERS

KOPPERS
PRESSURE-TREATED WOOD



At Pennsylvania Railroad's New Ore Pier

Super Highway for Ore

Designed, Fabricated and Erected by

Heyl+Patterson

The modern conveying, car loading and weighing facilities at the new Pennsylvania Railroad Greenwich Point, South Philadelphia, Ore Pier provide speed, efficiency and, above all, flexibility to handle any unloading situation without delay at the new pier.

Each of the 54" wide, high tension, *steel cord* belt conveyors stretches from the tip of the pier to the car-loading house some 1600 feet away. And each belt is capable of carrying ore at the rate of over 3000 tons per hour (ultimate capacity 5400 tons).

The horizontal portions of both conveyor belts are equipped with impact idlers and are designed for loading at any point.

In the car-loading house both conveyors can discharge ore, by means of tilting stoneboxes, into either of two 600-ton capacity bins. These bins will discharge automatically-controlled amounts of ore into 4 scale-mounted hoppers which will load cars on two tracks.

This arrangement will permit the handling of two entirely different ores simultaneously without difficulty or confusion.

This smooth-working, efficient ore handling system illustrates the ability of Heyl & Patterson to design and build conveying equipment to meet specific requirements.

Have a Heyl & Patterson engineer help you with your Heavy Bulk Materials Handling problem.

High Lift-Turnover-Rotary Railroad Car Dumpers
Boat Loaders and Unloaders
Ore Bridges
Coal Handling Equipment
Pig Iron Casting Machines
Cyclone Thickeners
Thorsten Coal Samplers
Car Hauls and Boat Movers
Coal Crushers
Bradford Breakers

Heyl+Patterson, Inc.

"SINCE 1887"

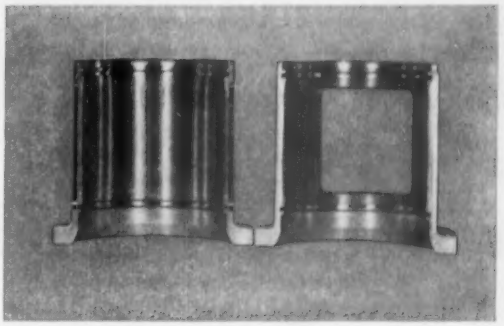
55 FORT PITT BLVD. PITTSBURGH 22, PA.

New G-E suspension bearings cut oil costs, save up to $84.70 per locomotive unit annually

Here's an opportunity to make substantial savings in oil costs and greatly reduce below-deck maintenance expense. With General Electric's new "oil-return" traction motor suspension bearings, a passenger unit, for example, averaging 20,000 miles monthly, is capable of reducing oil consumption approximately 220 gallons per year. It's all accomplished by "oil-return" grooves cut into the bore at each end of the bearing. Through these grooves excess lubricating oil is "returned" to the axle-cap—not onto the roadbed.

In addition to their oil-saving feature, G-E suspension bearings are built for long-life and low maintenance service. Made from an alloy composition ideal for railway service, they resist breakage and wear under today's rigorous operating conditions. Their rigid construction—they stay tight in axle-caps—means still less wear on bearings and traction motor gearing. Your ordering and stocking procedure is simplified, too, because two keyways are cut in top halves to permit interchangeability between commutator and pinion ends. As an added convenience, new bearings are available for your used ones under the terms of the General Electric Exchange Plan.

To get top performance—"original equipment" performance—from your G-E electric rotating apparatus, always specify ***genuine*** G-E suspension bearings. They're the best you can buy for your G-E traction motors. General Electric Company, Schenectady 5, N. Y. 125-8



G-E BEARINGS KEEP MAINTENANCE COSTS LOW

Special "oil-return" grooves, as shown above, are built into tin-base babbitted bearings for use with the GE-752, -746, and -726 traction motors. Designed for high-speed road locomotive service, the babbitt becomes an integral part of the shell, forming a void-free layer which resists peening out, loosening, or breaking off in service. For low-speed switching operations, G-E solid bronze suspension bearings are used. Both types are accurately machined to a smooth surface for many miles of low-cost maintenance operation.

You can put your confidence in—

GENERAL ELECTRIC

Pressure treated for *Strength that Lasts*

Adzed and
Bored Cross Ties
Bridge Ties
Piles
Timbers

Just as railroad service has improved through the years—so has the quality of AMCRECO cross ties, bridge ties, piles and timbers. Through continuing research in the last quarter of a century, the service life of Amcreco creosoted products has been greatly extended. Improvements in our basic Lowry process of Creosoting under Pressure have given a green light to construction and maintenance economy. Write for a full explanation.

AMERICAN CREOSOTING COMPANY

COLONIAL CREOSOTING COMPANY INCORPORATED

AMCRECO LOWRY PROCESS CREOSOTED WOOD

GEORGIA CREOSOTING COMPANY INCORPORATED

GENERAL SALES OFFICE—CHICAGO, ILLINOIS
10 FIELD SALES OFFICES TO SERVE YOU

Current Publications

PAMPHLETS

HISTORY OF THE INDUSTRIAL RAILWAY CASES, by Charles S. Belsterling. 25 pages. Available from Mr. Belsterling, One East 60th st., New York 22. $10.

This pamphlet traces cases before the I.C.C. which involved disputes as to whether or not trunk line carriers were obligated to pay "captive" railroads a share of the through rate.

•

WAGES, EARNINGS AND EMPLOYMENT—NASHVILLE, CHATTANOOGA & ST. LOUIS RAILWAY, 1866-1896, by Rendigs Fels. 72 pages. Vanderbilt University Press, Kirkland Hall, Nashville 4, Tenn. $1.

A brief but scholarly and forthright account of the business history of the NC & StL, based on payrolls and other statistical records which the company had saved since the Civil War. The author and his associates have restricted the study to the three decades which in their opinion would contribute most to economic history, 1866-96, and have made no pretense of exploiting the company's records fully. Statistical series which appear in an appendix cover wages and earnings of brakemen, conductors, enginemen, firemen and laborers, and number of employees on a quarterly basis; and business volume and revenue and division of gross income and salaries, on an annual basis.

•

A YEAR BOOK OF JNR INFORMATION, 1953 edition. 64 pages. Japanese National Railways, JNR bldg., Marunouchi, Tokyo, Japan. Free.

This little handbook is similar in style and content to our own Yearbook of Railroad Information. Leading off with a brief history of the Japanese National Railways, it continues with statistical tables for the years 1943 through 1952, covering plant, service, revenue, employees and related subjects.

•

SPENDING FOR INDUSTRIAL RESEARCH, 1951-1952, by DeWitt C. Dearborn, Rose W. Kneznek, and Robert N. Anthony. 103 pages. Division of Research, Graduate School of Business Administration, Harvard University, Boston 63, Mass. $2.50.

Every segment of industry contributed to the more than $2,500,000,000 which U. S. firms spent for research and development activities during the period under review. Manufacturers of aircraft, industrial chemicals and electrical machinery led the way, but in every field of industry at least one-fourth of the companies supported a significant amount of research. These are among the findings of this report covering the results of three coordinated surveys — two conducted by the Harvard Business School and one by the U. S. Bureau of Labor Statistics and the Research and Development Board. The first of the Harvard surveys was directed at the complete membership list of the National Association of Manufacturers. The second, and more detailed, was directed to the 191 companies which, among them, account for about one-third of total industrial spending for research and development. The Bureau of Labor Statistics-Research and Development Board survey covered all firms known to be engaged in research.

•

MEXICO TRAVEL INDEX. 28 pages. Mexico Travel Index, Apartado Postal 704, Mexico 1, D.F.

A directory of hotels, travel agents, tour operators and automobile associations. Also contains information on customs regulations, postal service, churches, climate, clothing, and other things a traveler should know before starting a trip to Mexico.

GENUINE "MINK" WATER COOLERS for Diesel Locomotives

Model No. 15

"A COOLER DRINK BY MINK" that is being adopted by more and more railroads and found to be low in cost and economical to operate.

Soundly engineered and solidly constructed, Mink coolers use stainless steel at every point where contamination might occur. Copper immersion coils give instant cooling and a constant supply of cool drinking water. Every part is quickly accessible for cleaning and sterilization.

Model No. 19

MODEL NO. 15

Holds 20 lbs. of crushed ice and has a 1-2-3- or 5 gallon jug capacity.

MODEL NO. 19

Holds 30 lbs. of crushed ice and has a 3 gallon stainless steel reservoir. Equipped with stainless steel refrigerated food compartment with a capacity of over 1000 cu. in.

MODEL NO. 26

Similar to No. 15, holds 30 lbs. of crushed ice and has a 2 gallon removable stainless steel reservoir.

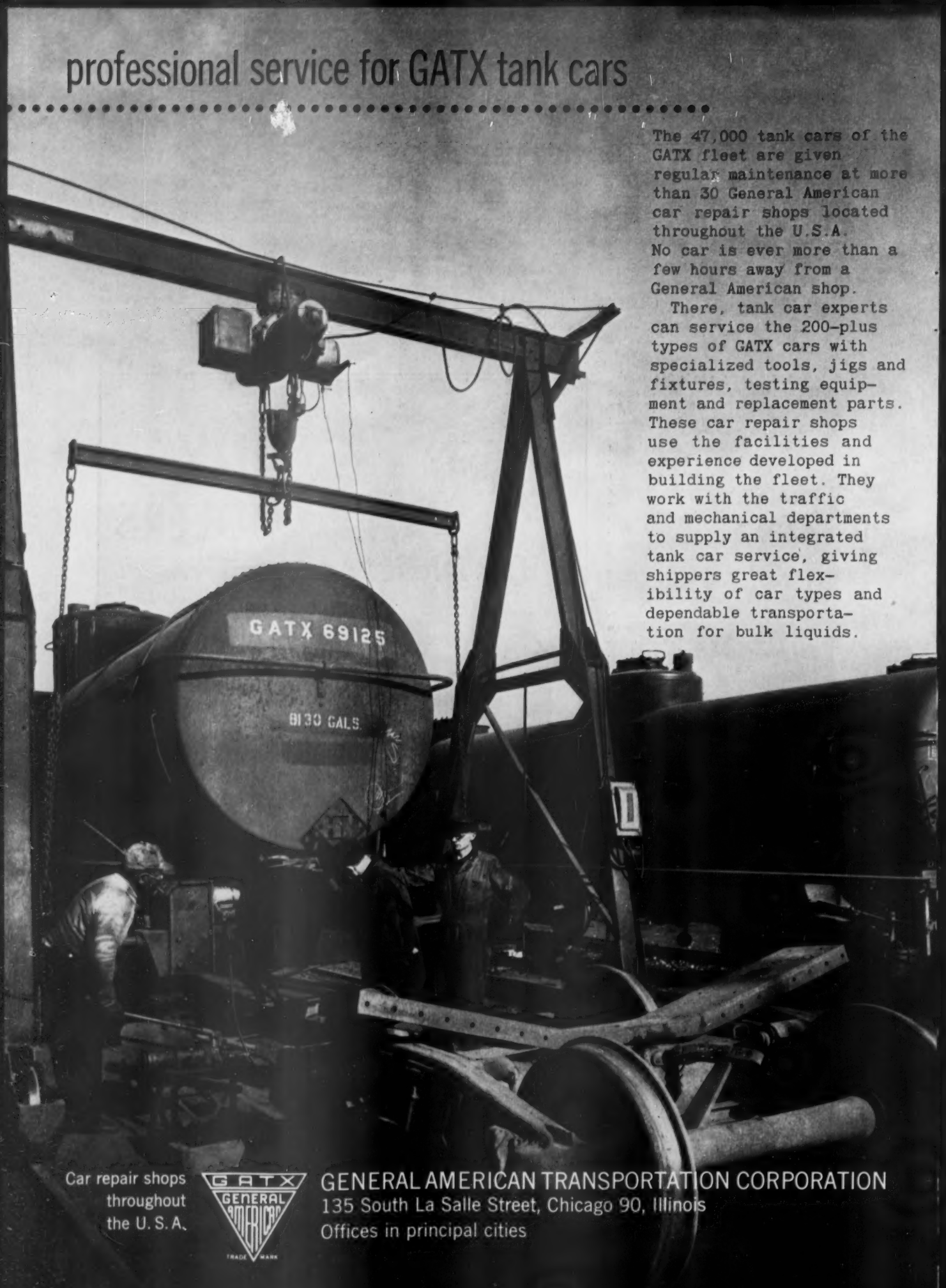
Write for data sheets describing these and other Mink models in full detail.

Model No. 26

MINK-DAYTON, INC.

117 N. Findlay St., Dayton 3, Ohio

professional service for GATX tank cars



The 47,000 tank cars of the GATX fleet are given regular maintenance at more than 30 General American car repair shops located throughout the U.S.A. No car is ever more than a few hours away from a General American shop.

There, tank car experts can service the 200-plus types of GATX cars with specialized tools, jigs and fixtures, testing equipment and replacement parts. These car repair shops use the facilities and experience developed in building the fleet. They work with the traffic and mechanical departments to supply an integrated tank car service, giving shippers great flexibility of car types and dependable transportation for bulk liquids.

Car repair shops throughout the U. S. A.

GATX GENERAL AMERICAN TRADE MARK

GENERAL AMERICAN TRANSPORTATION CORPORATION
135 South La Salle Street, Chicago 90, Illinois
Offices in principal cities

When Are Old Freight Cars Obsolete?

On January 1, 1953, more than 37 per cent of the freight cars owned by the Class I railroads were over 25 years old; eighteen per cent were over 30 years old. In the case of box cars, almost 32 per cent were over 25 years old, but less than 10 per cent were over 30 years old.

It is customary to quote these percentages as indicating the degree of obsolescence in the freight-car ownership of the Class I railroads. Is the matter of freight-car obsolescence merely a matter of physical age? If nothing ever changed as the years rolled by, would freight cars ever become obsolete?

As a matter of fact, obsolescence is the result of change rather than chronological age. Many changes have taken place during the past 25 years —in shipper needs, in railway operating conditions, and in freight-car design to meet the needs both of the shippers and the railroads. Shippers have become very cost conscious. They are increasingly reluctant to pay the price of packaging to withstand the effect of rough handling. Lift trucks are being increasingly employed for loading and unloading box cars. Freight-train speeds have been increasing. Associated with these changes are new freight-car trucks with built-in snubbing devices and long-travel springs. Steel car floors are now available which are capable of withstanding any loads likely to be applied to them. Wide side doors facilitate the use of lift trucks for loading and unloading box cars. Devices for anchoring and compartmentizing the box-car load add protection to the load and simplify packaging.

The increases in freight-train speeds and the improvement in trucks for high-speed riding have made obsolete freight cars of all types with the old standard trucks with short-travel springs and no snubbing devices. These changes have been associated with the increasing freight-train speeds, which the old trucks cannot meet adequately. Indeed, the snubbing devices reduce vertical oscillation roughness at medium speeds and the high-speed trucks effectively protect lading from the effects of rough riding at all speeds.

In the case of box cars, other factors also are involved. It is true that many built over 25 years ago have had their old floors strengthened by the application of additional stringers. The frequency with which floors are broken by industrial trucks and loads are dropped through floors en route indicates, however, that too many cars with weak floors are still in service.

The need for load protection is becoming more acute for two reasons: first, because of operating conditions and, second, to satisfy shipper demands. The shipper is becoming more insistent because he now has a choice available to him between railroads and competing forms of transportation with less acute rough handling problems and because it is always his desire to cut down on packaging costs.

The trend toward the use of industrial trucks for loading and unloading box cars has made cars with side doors less than 8 ft. wide obsolete for universal service. Narrow doors, if they do not actually preclude the use of the trucks, require the expenditure of otherwise unnecessary time for maneuvering.

The railroads are an old industry which has long operated under monopolistic conditions. They are now subjected to increasingly acute competition from other forms of transportation. At the same time, shipping needs of industry have become more highly specialized and changes in its needs are developing at a more rapid rate than formerly. In the monopolistic days, as new developments, tending to make equipment and practice obsolete, came along, the railroads perhaps could take their time in replacing old equipment and adopting new practices. This they can no longer do without dangerously jeopardizing their competitive position.

How to Define Obsolescence

The usefulness of box cars with narrow doors and no devices for anchoring and compartmentizing loads is rapidly shrinking. Cars of any type with the old trucks are an operating handicap, are expensive to maintain, and are a source of damage to lading. Their replacement with modern equipment will improve operating efficiency, reduce equipment maintenance, and protect the railroads against loss of business to competitors.

These are the facts which define obsolescence. So measured, not only will most of the cars over 25 years old be found obsolete, but some of those in younger age groups as well. With conditions as they are now, and changes tending to accelerate, 20 years is becoming a better average for the measure of effective life than the 30 or more years which prevails today.

THIS WEEK AT CHICAGO...

Accenting Engineering Progress

A.R.E.A. convention to emphasize recent construction projects and developments of manufacturers

C. G. Grove
President, A.R.E.A.

For three days this week, beginning on Tuesday, March 16, engineering and maintenance-of-way officers of the railways will be in session for the purposes of discussing mutual problems and of evaluating the progress made in efforts to solve them. The occasion will be the annual convention of the American Railway Engineering Association, to be held at the Palmer House, Chicago. As detailed at right, the program will consist primarily of the presentation of reports by the association's 22 standing committees and one special committee, liberally interspersed with addresses on timely subjects.

In recognition of the special emphasis being placed on engineering matters this week, *Railway Age* presents on the following pages two articles describing outstanding construction projects, plus descriptions of a large number of new or improved materials, devices and machines developed by manufacturers as their contribution in the effort to reduce maintenance costs.

TUESDAY, March 16

● Morning Session—9:45 to 12:00—Grand Ballroom ●

Address of C. G. Grove, president
Report of Neal D. Howard, secretary
Report of A. B. Hillman, treasurer
Greetings from the Signal Section, A.A.R., W. N. Hartman, chairman
Greetings from the Electrical Section, A.A.R., R. I. Fort, chairman
Address—"Railroad Progress Through Engineering," by R. G. May, vice-president, Operations and Maintenance Department, A.A.R.
Address—"Nuclear Power and the Railroads," by John R. Menke, president, Nuclear Development Associates, Inc.
Address—"Research Review," by G. M. Magee, director of engineering research, Engineering Division, A.A.R.
Motion Picture—"225,000-Mile Proving Ground"

● Afternoon Session—2:00 to 4:45—Grand Ballroom ●

Reports of Committees on
- Yards and Terminals
- Economics of Railway Location and Operation
  - Address—"Economics of Railway Operation in a Competitive Era," by Fred N. Nye, director of transportation research, New York Central system
- Waterways and Harbors
- Highways
  - Address—"The Effectiveness of Highway-Railway Grade Crossing Protection," by W. J. Hedley, assistant chief engineer, Wabash
- Cooperative Relations with Universities
- Contract Forms
- Records and Accounts

WEDNESDAY, March 17

● Morning Session—9:00 to 12:00—Red Lacquer Room ●

Reports of Committees on
- Water, Oil and Sanitation Services
- Wood Bridges and Trestles
  - Motion Picture—"Fire Protection of Timber Bridges on the Santa Fe," with commentary by C. H. Sandberg, assistant bridge engineer, Santa Fe
- Clearances
- Impact and Bridge Stresses
  - Motion Picture—"Laboratory Investigation of Full-Size Reinforced Concrete Railroad Bridge Slabs"
- Masonry
  - Address—"Alkali Aggregate Reaction in Concrete," by P. D. Miesenhelder, research engineer concrete, Engineering Division, A.A.R.
- Iron and Steel Structures
  - Address—"Painting Railroad Bridges," by Joseph Bigos, senior fellow, Mellon Institute, director of research, Steel Structures Painting Council

● Association Luncheon—12 noon—Grand Ballroom ●

Address by J. M. Symes, executive vice-president, Pennsylvania

● Afternoon Session—2:30 to 5:15—Red Lacquer Room ●

Reports of Committees on
- Waterproofing
- Wood Preservation
- Buildings
- Roadway and Ballast
  - Address—"Lateral Forces Beneath Fills," by R. B. Peck, research professor of soil mechanics, University of Illinois
- Economics of Railway Labor
  - Address—"Labor Economics in Retrospect," by J. S. McBride, chief engineer, retired, Chicago & Eastern Illinois.
- Maintenance of Way Work Equipment

THURSDAY, March 18

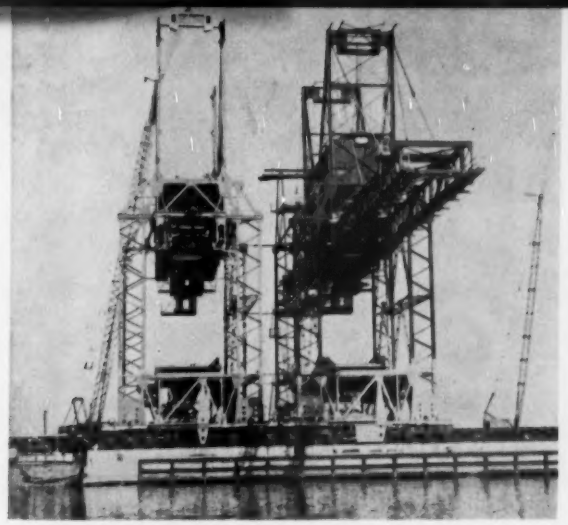
● Morning Session—9:00 to 12:30—Grand Ballroom ●

Reports of Committees on
- Ties
- Track
  - Address—"Progress in Brine Corrosion Investigation," by S. K. Coburn, chemical engineer, Engineering Division, A.A.R.
- Special Committee on Continuous Welded Rail
- Rail
  - Featuring a series of addresses and comments on shelly rail, by R. E. Cramer, research associate professor, University of Illinois; H. J. Grover, Battelle Memorial Institute; M. M. Frocht, professor of mechanics, director of experimental stress analysis, Illinois Institute of Technology; and L. S. Crane, engineer of tests, Southern system.

Closing Business and Installation of Officers.

● 2:00 to 4:30 ●

Open house at the A.A.R. Central Research Laboratory to see facilities and equipment and witness tests under way.



COMPLETED PIER will have two ore unloading machines. One machine *(right)* is here seen nearing completion.

TWO CONVEYOR BELTS deliver ore to headhouse where it passes through hoppers into cars spotted on loop track.

PRR UNVEILS

New Ore-Unloading Terminal

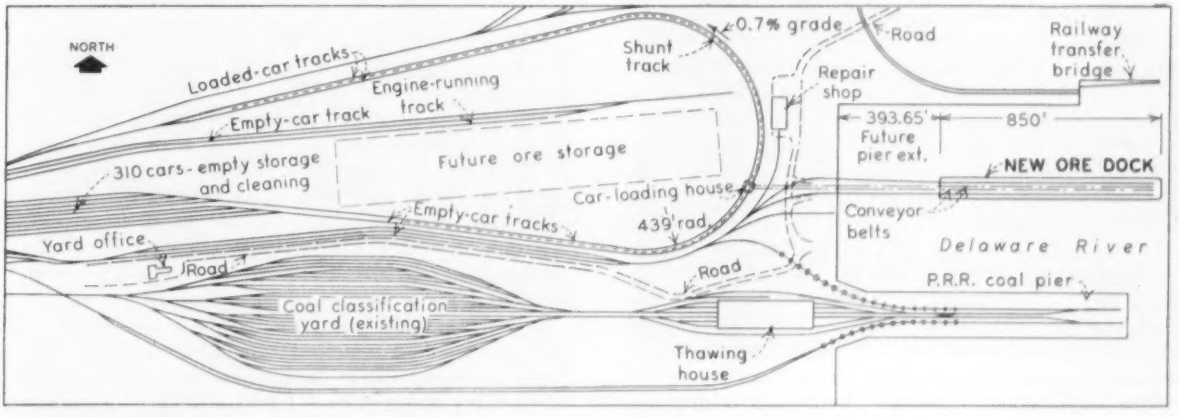
Facility, designed for ready expansion, is capable of transferring as much as 3,600 tons of iron ore per hour from ships to railroad cars

The Pennsylvania's $10¼ million import ore unloading facility at Philadelphia was scheduled to be opened for service on or about March 15, climaxing over two years of intensive construction work. On the Delaware river at Greenwich Point, the site is conveniently accessible to shipping and eliminates the necessity of navigating the busy main port area to reach the pier. It consists of two high-capacity ore-unloading machines on a reinforced concrete pier, two conveyor belts, and car-loading, storage and supporting facilities. The terminal, which had been under construction since January 1952, is designed to handle iron ore imported from such sources as the new fields being developed in Labrador, South America and Africa, as well as from the older fields in Scandinavia, the Middle East and the Far East.

Ore imported into the United States during 1953 totaled some 16 million tons and it is estimated that the tonnage in subsequent years will increase substantially. It was because of the anticipated steady increase in importation of ore that the Pennsylvania has built the new terminal. It was also with this thought in mind that the facility was constructed so its ore-handling capacity can be easily expanded. The road points out that the pier's capacity can be tripled should the need develop.

The "business end" of the facility is constructed on a reinforced concrete pier, 76 ft. wide and 850 ft. long, which is supported by 1,210 reinforced concrete piles. Piles are 20 in. square and vary in length from 70 to 90 ft. Designed to carry a load of 65 tons each, the piles were cast and cured on specially constructed slabs adjacent to the pier site and transported by barge to the floating pile drivers.

Two Industrial Brownhoist unloading machines operate on four 140-lb. rails, two on either side of the pier. Each of these machines is rated for handling 1,400 tons of average-weight ore per hour. On heavier ore, in free digging, each machine is expected to do up to 1,800 tons per hour. Each machine is equipped with a 225-cu. ft.



EMPTY ORE CARS are delivered to loading house over loop tracks.

HEADHOUSE straddles loop tracks over which empty cars move into position for loading. In moving from dock to headhouse, ore is lifted 80 ft. by conveyors.

clamshell-type unloading bucket. All the machinery is designed to handle ore of a consistency of 225-lb. per cu. ft., so that each unloader is capable of lifting 25 tons at a single bite.

The machines are of the "double-apron, man-trolley" type, i.e., they have unloading aprons on either side which can be raised to clear ships' rigging and superstructures when necessary, and have the operator's cab mounted directly adjacent to and integral with the bucket cable winches, enabling the operator to ride out on the apron over a ship's hold to guide the placement and operation of the bucket.

The unloading machines can, if desired, be equipped with 120-cu. ft. buckets for use in ships with small holds and in places inaccessible to the larger buckets. The buckets can operate at a maximum reach of 72 ft. from the edge of the pier, enabling them to reach all parts of the ships' holds. They will clear 57 ft. above mean high water. Pier-length apron tracks have been provided on each side of the pier, on which open-top cars can be spotted alongside ships for direct ship-to-car unloading with ships' tackle in the "clean-up" operations.

Ore removed from ships is deposited by the buckets in 100-ton capacity receiving hoppers built into the structure of the unloading machines. From these hoppers, the ore is transferred by an apron-type feeder to either of the two conveyor belts, each 54 in. wide. These endless belts are of the rubberized-fabric, steel-cable type and run 1,550 ft. from the center of the head pulley to the center of the tail pulley. The ore is lifted 80 ft. by the belts in passing from the unloading machines to the top of the car-loading house at the inshore end of the pier. Each conveyor belt operates as a speed of 500 ft. per min., and is driven by a single 600-hp. General Electric motor at the head pulley. Each belt has a capacity of approximately 3,300 net tons of ore per hour, based on ore weighing 150 lb. per cu. ft.

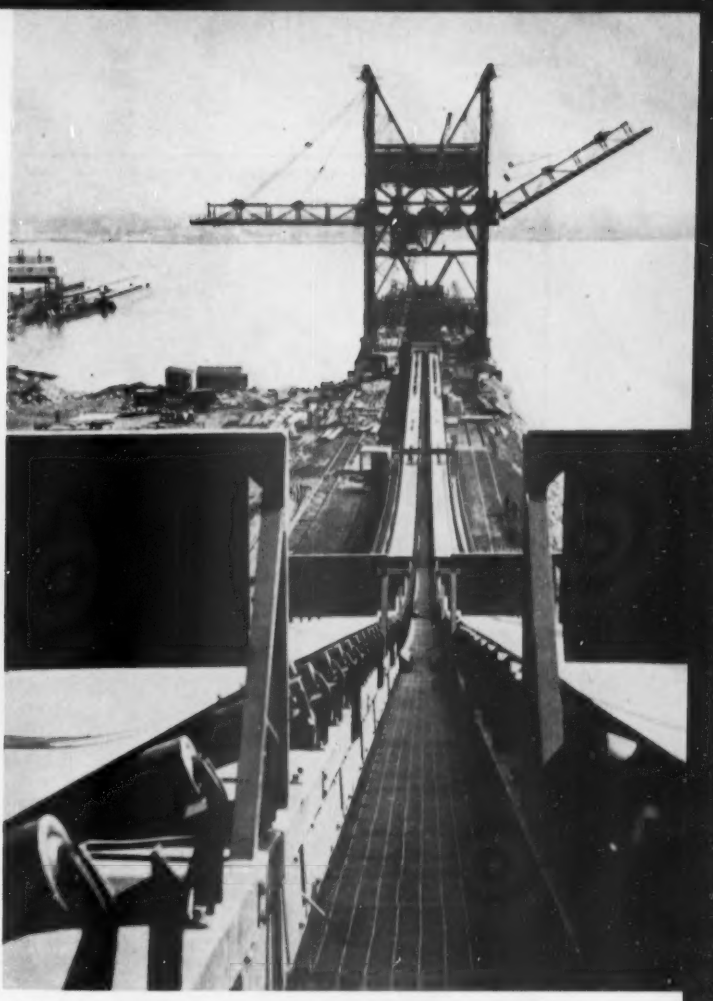
The extraordinary flexibility of this new facility will permit the unloading of two ships simultaneously and the unloading of different grades of ore at the same time. Not only can each machine discharge from either side of the pier to either of the two conveyor belts (or to the same belt), but a similar degree of flexibility is available in the conveyor-belt operation. The belts transfer the ore to two 600-ton capacity receiving hoppers in the upper portion of the car-loading house. Here the operator can direct the ore from either belt into either hopper, or he can unload both conveyors into the same hopper.

From the receiving hoppers the ore is transferred by apron feeders into weighing hoppers which are located immediately above the tracks of the car-loading "loop" (see diagram). Weights of the ore charges in these hoppers are automatically recorded; the ore is then dumped directly from the weighing hoppers into ore cars standing on the two loop tracks. Cars are spotted on these tracks by Atlas diesel-electric, narrow-gage shunt locomotives which operate on a track placed between the two loading tracks. The loop loading-track layout provides a speedy, continuous car-loading operation.

Design and Safety Features

Recent developments in bulk ore unloading machine design and engineering have been incorporated in the construction of these facilities. For example, the machines' trolley, hoist and bucket-hold motors are all of the variable-voltage control type. This gives the operator the finest possible control over bucket and trolley movements and insures maximum safety to ships and cargoes. Also, atop each unloading machine tower is an anemometer to record wind velocity. When the velocity reaches 38 m.p.h., rail clamps are automatically actuated, preventing any movement of the unloading towers.

In addition to the pier, unloaders, conveyors and car-loading equipment, various supporting facilities have been constructed. These include new trackage consisting of receiving and departure tracks capable of accommodating trains as long as 125 cars, empty-car classification



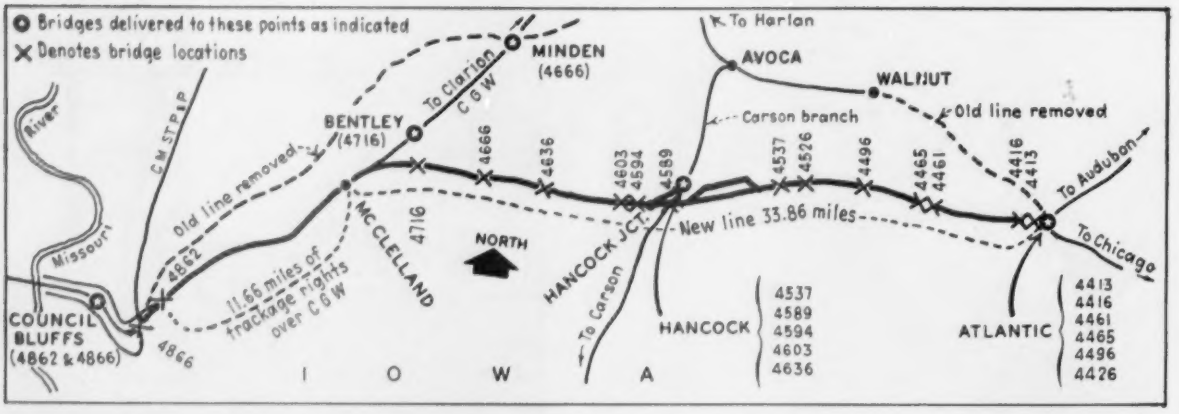
THE NEW DOCK as seen from a point near the top of the conveyor incline. Levelers are positioned over the belts at intervals to maintain even flow of ore into hoppers.

tracks, car-cleaning and repair tracks, car-storage tracks, and the two loading (loop) tracks. Also there is a machine shop for the maintenance of the ore-unloading equipment; a yard office; an electric substation; a bunkhouse which will accommodate up to 94 trainmen; welfare facilities; and driveways and parking lots.

Provision has been made for a 400-ft. extension of the effective lengths of the unloading pier and for lengthening the slips to accommodate four ore ships at one time (two on each side) in contrast to the present capacity of two ships. In addition, the facility has been so designed that up to six unloading machines can be operated at one time on the pier if this should be found necessary in the future. Such an expansion would also entail the construction of two more 600-ton capacity receiving hoppers, additional unloading and yard trackage, and other facilities. In addition, ground storage facilities would be provided capable of handling, ultimately, up to a million tons of ore. The ground-storage area would be served by a conveyor belt leading directly from the top of the car-loading house and would be equipped with separate unloading, loading and weighing hoppers.

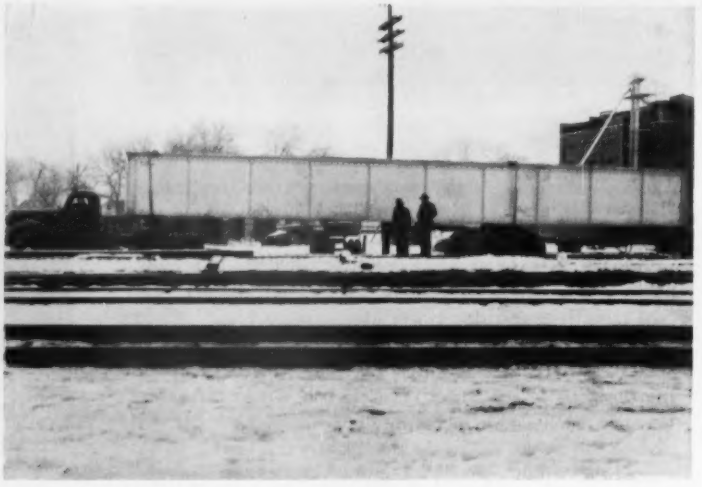
The construction of the new terminal was begun in 1952 under the general supervision of J. L. Gressitt, then chief engineer of the Pennsylvania, who retired effective January 1, 1954. The project was completed under the general supervision of S. R. Hursh who succeeded Mr. Gressitt as chief engineer. The undertaking was carried out under the direct supervision of L. P. Struble, then chief engineer of the road's Eastern region. When Mr. Struble retired on July 1, 1953, direct supervision over construction of the terminal was assumed by his successor, C. J. Henry. Detailed plans for the ore dock were developed under the direct supervision of J. E. South, then engineer of bridges and buildings of the Eastern region and now assistant chief engineer of that region. The conveyor belt and car-loading facilities were designed and constructed from railroad specifications by Heyl & Patterson, Inc., Pittsburgh, Pa.

PRECAST CONCRETE PILES, 1,210 in number, support the new pier. This view was taken as the first unloading machine was being erected.



BRIDGE STEEL, including all accessories, was shipped by rail to five delivery points shown on map and then . . .

. . . LOADED BY CRANE on over-the-road hauling equipment consisting of . . .



. . . A 30-TON dolly-type trailer and an International Harvester tandem-drive tractor.

IN NEW LINE CONSTRUCTION . . .

Bridges Built Ahead of Track

Steel spans for Rock Island's Atlantic cut-off in Iowa were trucked in and erected with crawler equipment, permitting track laying to be carried across bridge openings without interruption

By JOHN F. MARSH
Engineer of Bridges, Rock Island, Chicago

The traditional procedure when building new lines of railroad is to construct the track up to each bridge opening and then erect the bridge, bringing the material in over the new line. This means that the track laying can't continue on the other side until the bridge has been completed. It also means that a bridge can't be erected until the track has been built up to it. With each class of work thus dependent on the other it is not difficult to visualize the possibility of serious and costly delays occurring, even under the best of conditions.

No Dependency on This Job

To avoid the disadvantages of this conventional procedure, the Rock Island, in building its Atlantic cut-off* in Iowa, decided to follow a bridge-erection technique

*See article entitled "34-Mile Line Change," *Railway Age*, October 5, 1953.

COMPLETE GIRDER SPAN ready for movement over county roads and railway right of way to the bridge site.

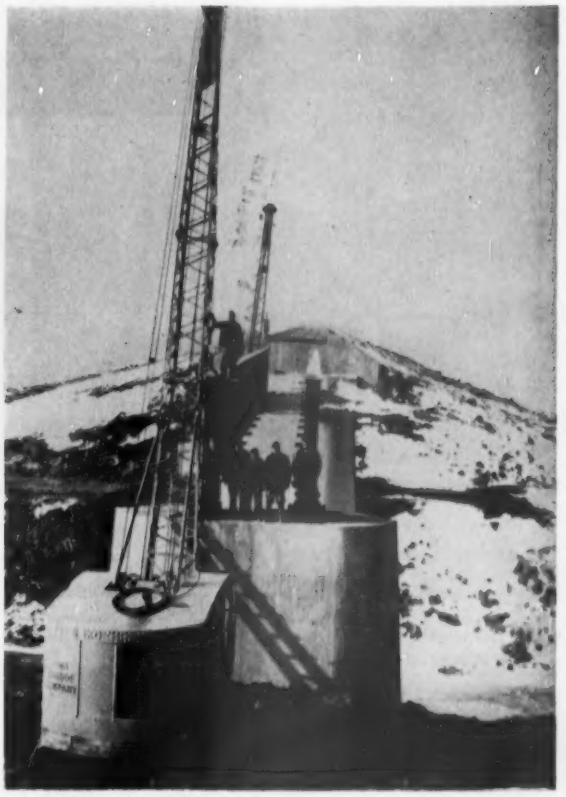
designed to divorce this work from its dependency on the track laying. The technique was simply to erect the bridges in advance of the track laying, using heavy-duty trucking equipment for hauling the steel spans from the delivery points to the bridge sites, and crawler cranes for lifting them into position on the substructures. Fourteen of the 15 steel bridges required on the cut-off were erected by this method.

The Atlantic cut-off is a single-track line, 46.33 miles long, between Atlantic, Iowa, and Council Bluffs. It was constructed across the rolling terrain east and north of Council Bluffs to effect a saving of 10.21 miles of route mileage, and to eliminate 1,640 degrees of central angle and 131 ft. in the rise and fall of gradients. The relocation has effected an increase in speed and operating tonnage ratings and is expected to decrease maintenance costs. The project was designed to place the Rock Island in a better competitive position with relation to the other five railroads which serve Council Bluffs and Omaha from Chicago.

Specifically, the relocation involved construction of 33.86 miles of new line between Atlantic and McClelland, which work included a connection with the Rock Island's Carson branch at Hancock, Iowa, approximately 19 miles west of Atlantic; joint operation over 11.66 miles of the Chicago Great Western through the use of trackage rights between McClelland and Council Bluffs; and construction of a new connection 0.81 miles long into the Rock Island's new East yard at Council Bluffs.

The track gang first started at Atlantic and worked westward to a point about one-half mile east of bridge No. 4465. This gang then moved to Hancock and worked east from Hancock Junction to join up with the track previously completed. It then went to McClelland and laid the final stretch by working eastward from that point to Hancock Junction. Because of careful timing and coordination of the bridge-erection work the track-laying

LATERAL BRACING was hoisted and positioned from cableway between boom-heads of cranes.



AT BRIDGE SITES the girders or spans were raised and set into position on the prepared bridge seats.

ERECTING 90-ft. girder for bridge No. 4594 (West Nishnabotna river). Opposite girder is already in place.

FORTY-FIVE-TON girder, 100 ft. long, being erected at bridge No. 4465 over Indian creek.

gang found that each bridge had been erected in advance of its arrival. It is apparent, therefore, that delays to the track-laying gang, and time lost due to the necessity of shifting operations from one point to another, were minimized.

All Girder or Beam Spans

The substructures of the steel bridges on this project consisted of concrete bank-block type abutments and concrete piers. These were supported on concrete-filled tubular piles. The superstructures consisted of deck-plate girders and wide-flange steel beams carrying creosoted-timber ballasted decks. One through-plate girder span was used to cross the Milwaukee at Council Bluffs. The accompanying table gives information on the character and location of the various steel spans.

In the case of bridge No. 4862, construction involved the replacement of an existing bridge over Mosquito creek on that portion of the CGW line operated under trackage rights, so this bridge had to be erected under traffic. In the case of bridge No. 4594 spanning the Carson branch and U. S. Highway 59, the steel was received on cars directly under the bridge and erected without additional transportation.

The steel for the superstructures of all bridges except Nos. 4862 and 4594 was delivered on cars to the location of each of the three residencies—Atlantic, Hancock, and Council Bluffs—and to Bentley and Minden approximately 4.6 and 12.3 miles, respectively, east of McClelland on the Great Western. From these points the steel was moved to the proper bridge sites over county roads and the railway right of way. In one instance, however, involving Bridge No. 4465 over Indian creek, the spans were movevd over completed track to the railhead and then transported overland approximately one-half mile to the bridge site.

The work of transporting the steel to the bridge over the West Nishnabotna river was carried out during January 1953. This period was selected because records showed that the flow of water in the river was normally at its lowest ebb at that time. The same considerations dictated the construction of dry crossings over the other waterways. Crossings over the streams were made by installing a number of lines of corrugated iron pipe in the channel and "dozing" a dirt road over the tops of the pipes. The corrugated iron pipe used varied in diameter from 24 to 36 in. and the number of lines installed was dependent upon the flow in the waterway.

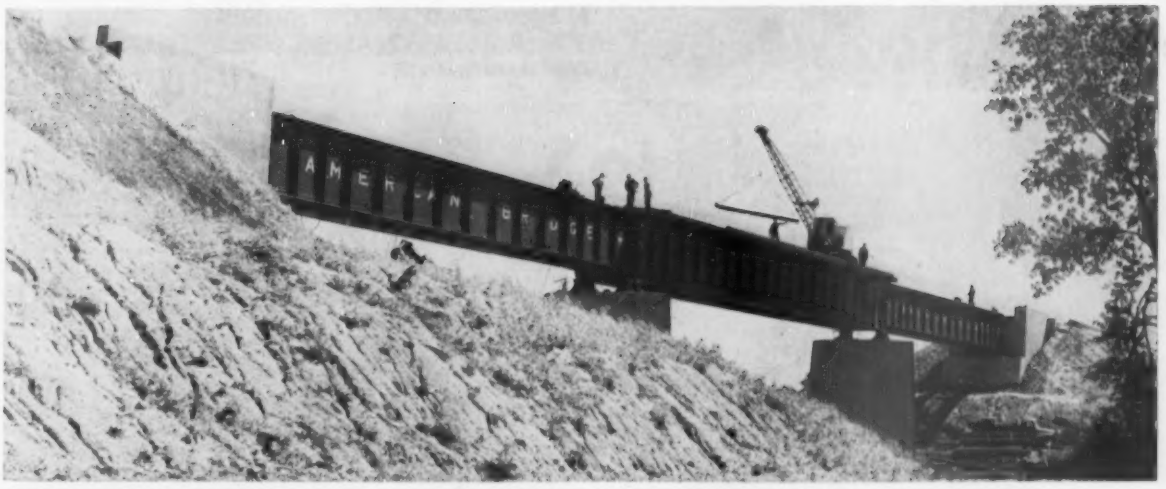
Heavy Transportation Equipment

Transportation of the bridge steel was generally routed from the points of delivery via county road to the intersection of the county road with the new line location nearest the respective bridge site, thence along the right

DESCRIPTION OF BRIDGES CONSTRUCTED ON ATLANTIC CUT-OFF

*Bridge Number	**Type	Total Length in Feet	Span Lengths in Feet and Arrangement	Location Over . . .
4413	DPG	125	35,55,35	Iowa Highway No. 83
4416	DPG	200	60,80,60	Buck creek
4461	DPG	144	44,60,44	County road
4465	DPG	260	80,100,80	Indian creek
4496	DPG	180	60,60,60	Walnut creek
4526	DPG	115	35,45,35	County road
4537	DPG	200	60,80,60	Graybill creek
††4589	WFB	205	40,35,3-40	Carson Branch & U.S. Hwy. 59
4594	DPG	538	2-90,100,2-90,78	West Nishnabotna river
4603	DPG	153	44,65,44	County road
4636	DPG	240	70,100,70	East Silver creek
4666	DPG	220	60,80,60	Middle Silver creek
4716	DPG	210	60,100,90,60	Keg creek
†4862	WFB-DPG-WFB	190	43,104,43	Mosquito creek (CGW Br.No.D196)
4866	TPG	120	120	CMStP&P

*The first three figures of the bridge number indicate the mile post distance from Chicago and the fourth figure indicates the bridge location within the mile to the nearest one-tenth. Mile post location of Atlantic, Iowa, is 439.9.
**DPG means deck-plate girder; WFB—wide-flange beam; TPG—through-plate girder.
†Located on the Chicago Great Western.
††Steel delivered to bridge site on cars moved over Carson branch.



TIMBER DECKING for the ballast floors was placed by a crane operating on timber mats.

of way using the supporting berm of the embankment (30 ft. below the subgrade) in the case of high embankments. Where embankments were too low to justify a berm the equipment moved along the right of way at the toe of the slope. Whenever necessary Caterpillar D6's leveled irregularities of the surface of the right of way to provide a suitable access road. In a few instances haulage was over the completed subgrade; however this was avoided whenever possible because of the necessity of delivering the steel at the ground level at each bridge site.

In transporting the girders, they were loaded at the bridge yard on a Fruehoff 30-ton capacity, U.S. Engineer type, dolly trailer mounted on two axles equipped with tandem wheels, and drawn by an International KB-8F tandem-drive tractor on which the forward end of the girder was supported. All wheels of this equipment were equipped with 1100 by 20 twelve-ply tires. The tractor unit and trailer were equipped with air brakes. In addition a bolster, consisting of a length of a 156-lb. wide-flange beam, was applied on both the tractor and the trailer units to support the girders.

A Koehring 304 crawler crane was used for loading the girders on the hauling equipment. The shorter spans were handled as completely assembled units. Girders for the longer and heavier spans were moved one at a time. To assure safe handling the spans were double-chained to the special wide-flange beam bolster on the tractor and trailer units.

During over-the-road movements, a Caterpillar D6 bulldozer was operated ahead of the trucking equipment and a similar unit brought up the rear. This equipment was used as required for towing or pushing and also to provide extra braking power on hills. Particular care was taken when moving the girders around curves and over bridges on the county roads. In one case it was necessary to provide shoring to strengthen a bridge before the load was handled over it.

On arrival at the bridge site, the steel was unloaded by two Koehring 304 or 605 crawler cranes, depending on the weight of the span or girder. For this purpose these units were equipped with extra-long booms and operated on timber mats at the piers or abutment at either end of the opening to be bridged. To erect the steel these cranes merely lifted the spans or members and set them in position on the prepared bridge seats.

Cableway for Lateral Bracing

In instances where girders were installed individually the lateral bracing was hoisted and positioned using a cableway stretched between the boom heads of the two cranes stationed at either end of the span. Two Jaeger 210-cu. ft. air compressors supplied the air for riveting operations.

Following the installation of the steel, the top flanges of the girders were painted. The timber decking for the ballast floor was then placed. This material was trucked to the bridge site and unloaded under the spans. An Insley Model K crawler crane, operating on 4-by-10-ft. timber mats, placed the decking. When it was necessary for the crane to operate on the completed deck, the creosoted timber was protected by the use of these same mats, or timber stringers were used.

As a matter of interest in connection with the construction of bridge No. 4636 over East Silver creek, before the piers and abutments had been completed for this structure, the steel for the superstructures was hauled five miles down the railroad right of way and across the West Nishnabotna river and placed where it would be available for use when required. This, incidentally, was the longest haul along the railroad grade and involved the transportation of two 100-ft. and four 70-ft. girders. The two 100-ft. girders weighed approximately 90 tons, or 45 tons each.

The entire project was carried out under the general direction of the writer, and under the direct supervision of W. E. Simpson, construction engineer. The American Bridge Company fabricated the steel for all the bridges. Foundation work was carried out by Acole Midwest Corporation, Chicago; List & Weatherly Construction Co., Kansas City; and the Iowa Bridge Company, Des Moines, Iowa. The latter company also erected the steel for all bridges except No. 4589 and No. 4862, which work was performed by List & Weatherly and the American Bridge Company, respectively.

What's New IN ENGINEERING AND MAINTENANCE

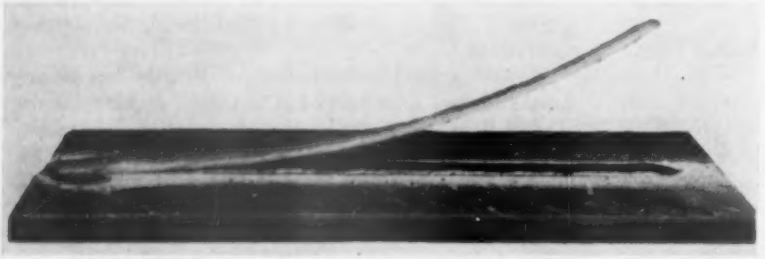
HY-RAIL car with canvas enclosure on pick-up body and . . .

. . . A NEW, all-steel, general service type body.

New Body Styles for Hy-Rail

The A32 Series A Hy-Rail motor car is now available with a new enclosure and a new body, according to Fairmont Railway Motors, Inc., Fairmont, Minn. The new body is an all-steel general-service type equipped with compartments with doors along either side. These compartments have shelves for small and medium-size tools as well as supplies. The center section is open, with a non-skid steel plate floor and a low, latch-type tail gate.

A waterproof canvas enclosure has been made available for the standard pick-up body. It is covered with 12-oz. brown waterproof canvas. Flexible plastic windows have been provided in the rear and door curtains. The side and rear curtains may be rolled up if desired when not required to keep out inclement weather •



Slag curls off as it cools making the weld nearly self cleaning.

Coated Welding Electrode

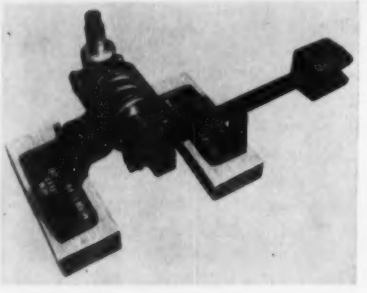
A new electrode, called Jetweld, which incorporates powdered metal in the electrode coating, has recently been announced by the Lincoln Electric Company, Cleveland. It is claimed that the new coating uses the heat of the arc more efficiently.

Jetweld is a heavily coated shielded-arc type electrode for operation in flat or near-flat positions with a.c. or d.c. welding current. It meets the physical requirements of Class E-7016 and is used on work formerly calling for E-6012 and E-6020 electrodes on single-pass or multiple-pass welds. It is said to be especially well suited for horizontal and flat-position fillets or laps, single and multi-pass butts, and deep grooves and corners. It is also suited for welding, without cracking and without surface holes, some of the higher carbon steels. The weld metal is said to have uniform X-ray quality, to be free from undercut and to have superior impact values at low temperatures.

Typical physical properties, as welded, are: Tensile strength, 93,000 p.s.i.; yield point, 79,000 p.s.i.; and elongation in 2 in., 15 to 22 per cent. Typical Charpy keyhole impact value at room temperature is 28 ft.-lb. At a 70-deg. value it is 20 ft.-lb.

Typical welding speeds in lap and fillet work are said to be on the order of 12 to 15 in. per minute. The bead appearance is comparable to that normally associated with automatic hidden arc welding. The slag produced is said to curl off as it cools, making the welds practically self-cleaning. It has a smooth, stable arc action which is said to be highly resistant to arc blow. It is a "drag" electrode operated with the coating touching the work, making for ease of operation, simplifying tack welding and operator training. The elimination of coating breakdown permits using the entire coated portion of the electrode, reducing stub loss to a minimum.

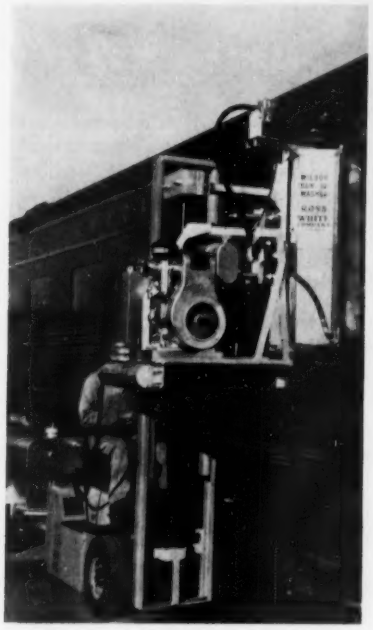
Jetweld is available in 5/32-in, 3/16-in, and ¼-in sizes •



Switch Stand

A new Model 99 automatic switch stand has been announced by the Bethlehem Steel Company, Bethlehem, Pa. Designed to stand up under the heavy abuse of run-through operations, the new stand is intended for use with rails 60 lb. and over, for all installations except main line where normal operation requires spring action. The stand may be operated manually as well as automatically. The manufacturer claims that vital parts such as the swivel link, link and pins, and screw-eye are heat-treated for extra strength and durability.

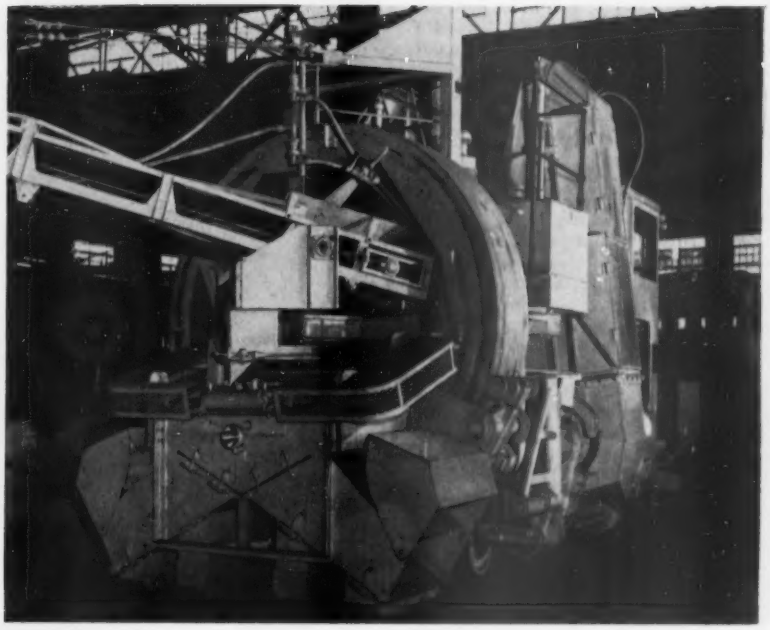
When run through, the first set of wheels moves the points to the new position, and the stand adjustment is completed by a spring mechanism working on the sliding-block principle. The points remain in position until returned by the operating lever, or another run-through operation. The target changes with the points to show the routing, but the lever remains unchanged until thrown by hand •



Mechanical Window Washer

The Wilson Window Washer is a new addition to the line of railroad car washing equipment produced by Ross & White Co., Chicago. Although smaller in size and lighter in weight, this new window washer is similar in appearance and operation to the Wilson Portable Train Washer. This smaller size is said to make the new unit particularly efficient when operating in the narrower clearances of railroad station platforms and terminals.

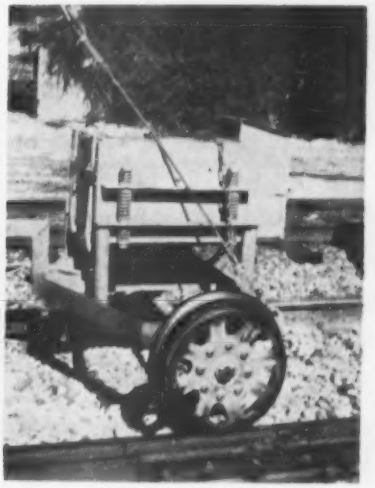
Designed for mounting on a medium duty, 2,000-lb. capacity fork-lift truck, the new window washer is a completely self-contained unit. Its water supply is carried in a two-wheeled tank coupled to the rear end of the fork-lift truck, and it carries its own gasoline-powered engine to drive the revolving brush and pump the water. It is reported that the machine's 45-in. window brush can clean the windows on one side of a passenger car in approximately one minute•



Better Distribution For Ballast Cleaner

A new system of hopper chutes and baffle plates provides "twelve-way" distribution of ballast in the Power Ballast Cleaner, according to an announcement by the manufacturer, the Pullman-Standard Car Manufacturing Company, Chicago. With this system it is stated that the cleaned ballast can be accurately spread between the rails, to either or both shoulders, or to various combinations of these locations either separately or simultaneously •

Flagman's set with tripod antenna.



Two-wheel trailer hauls gang's set.

Radio Saves Time For Track Equipment

Increased time utilization of heavy on-track maintenance equipment, and avoidance of train stops, are benefits accomplished by a new radio telephone system developed and tested in actual service by Motorola Inc., Chicago. This new system provides two-way telephone communication between the on-track equipment and its flagmen.

When on-track equipment clears the main line for a scheduled train, the

operator uses radio to tell the flagman so he need not flag the train. Changes in train line-ups, received at the on-track equipment, are immediately radioed to the flagman. This permits maximum utilization of the on-track equipment, with a minimum delay to trains.

The benefits of this radio telephone system are reported to be even greater on roads that have road-train radio in service, because communication is then available between crews of on-track equipment and the nearest wayside radio station, and between on-track equipment, approaching trains and flagmen.

One of the special features of the new communications system is the radio unit designed for use by flagmen. The problem was to provide a portable set with adequate range and positive communication. This was accomplished by developing a set with a 3-watt output, operated from a vibrator power supply fed from a set of six standard lantern-type dry cells. A small loudspeaker on top the unit is used to call the flagman who answers by using the microphone attached to the set by a flexible cord. A portable metal tripod, 5 ft. high, supports the half-wave coaxial antenna, which extends 48 in. above the top of the tripod. The radio set is weatherproof, and hangs from a hook in the tripod. The tripod, antenna and radio set weighs 35 lb.

The radio at the heavy on-track equipment is the standard 12-volt d.c. Motorola caboose radio. This equipment is hauled in a weatherproof box on a small two-wheel track trailer, linked to the rear of the on-track equipment. Power for this radio comes from the starter battery on the track equipment •

Trade Mark for Weed Killer

The CMU formulation which has had considerable industrial use over the past two seasons will now be identified as Telvar W, according to the Grasselli Chemicals Department of E. I. du Pont de Nemours & Co., Wilmington, Del.

The product is designed and packaged for custom applicators and industrial users for application where the objective is complete control of vegetation for an extended time. The "W" in the name identifies the product as a wettable powder.

Industrial trials of Telvar DW weed killer are planned for this year. Here again the "W" means that it is a wettable powder and the "D" stands for the active ingredient which is 3-(3, 4 dichlorophenyl)-1, 1-dimethylurea •

Ballast Regulator, Scarifier and Plow

Kershaw Manufacturing Company, Montgomery, Ala., has announced the complete redesign of its ballast regulator, scarifier and plow. It is stated that the improvements will augment the type and amount of work the machine will perform.

Some applications of this machine include regulation and distribution of ballast and placing of ballast for tamping machines; regulation and distribution of shoulder ballast and dressing track; plowing ballast from the tie ends ahead of a retimbering gang and replacing and dressing ballast behind the gang; scarifying and deweeding to provide adequate ballast drainage; and reclaiming ballast which has worked away from the ends of the ties.

The machine is equipped with hydraulic controls for raising, lowering and horizontal adjustment of the wings. The hydraulic control levers are mounted on the rear fire wall for ready accessibility by the operator. A new type vertical screw has also been added for adjustment of the wings vertically to satisfy the ballast section and the rail height. A V-type reversible plow is mounted on the rear of the unit.

The machine is powered with an International Harvester 100-hp. gasoline engine complete with four-speed truck transmission with both forward and reverse gears. This provides working speeds from 0 to 3 m.p.h. and a traveling speed of 22 m.p.h. The unit is equipped with a top, wider operator's seat and running lights. The wheels have been redesigned to prevent warpage if the machine should become derailed, and a redesigned brake assembly has more bearing supports to insure a more positive action of the self-equalizing brake shoes. Axle construction has been changed to incorporate 2½-in. double Timken bearings. A counterbalance type turntable has been mounted on the machine and the turntable runners form part of the running board.

The new machine weighs 9,000 lb. which is said to increase its ability to handle a large ballast load •

Cover Goggle

A new goggle, known as Kover-Mor, for wear over prescription glasses is now available from Willson Products, Inc., Reading, Pa. This goggle is said to provide a comfortable fit with ample clearance over modern large-frame prescription glasses. It has molded nylon eye cups which are said to combine light weight with toughness, non-flammability and low heat conductivity.

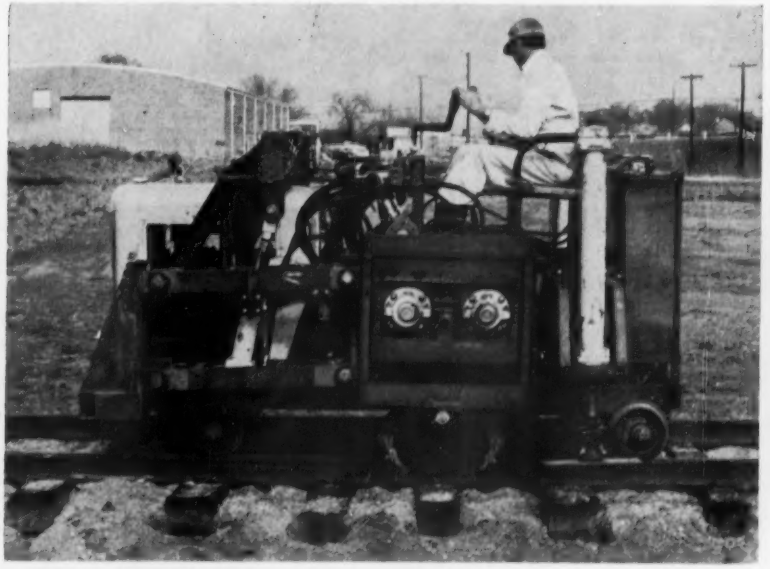
The goggles are available in two styles with clear, heat-treated glass lenses for chipping, and with a choice of filter lens shades for welding. Standard 50-mm. round lenses are provided for both styles and external lens retaining rings make lens replacement quick and easy. A rigid metal top bar provides adjustment to the individual user's face. The goggle has a two-piece adjustable headband and a leather nose-and-bridge curtain. Two-way ventilation is provided through slots in the lens retaining rings and screens in the eye-cups •

Improvements to Rail Propulsion Car

Several improvements to its rail propulsion car for use with the Model 205 excavator have been announced by the Koehring Company, Milwaukee. The new car in the Rail-Aid combination features four-wheel drive; air-operated, self-equalizing, internal, expanding-shoe brakes on all wheels; and a parking brake. Lifting capacity has been increased on the crane to 6.9 tons on the car and 8.9 tons on the ground.

Other features contributing to better performance include a maximum speed of 20 m.p.h., lighter car weight, reduced height of car platform, internal gear coupling, and an improved universal joint in the power transmission. The car is now able to handle excavators with various size crawler shoes up to 24 in.; ramps for loading and unloading are attached with simple hooks; and toggle-type quick-acting locks are used to stop and center the machine and fasten the crawlers in place on the platform.

Optional attachments for the car include locomotive couplers with M.C.B. contour lines, which will intercouple with other couplers having full size M.C.B. A.A.R. 10 and A.A.R. 10-A contours. The lower air line is protected by dummy coupling when not in use•



Combination Hydraulic Jack and Tamper

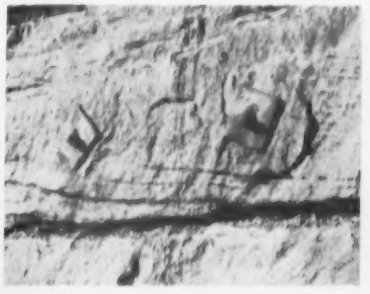
The combination hydraulic jack and tamping machine known as the Kershaw Jack-All has been completely redesigned, according to the Kershaw Manufacturing Company, Montgomery, Ala. This machine is designed to raise the track and "catch-off" the two adjacent ties, ahead of surfacing gangs equipped with production tampers, so that the surface will hold for the finish tamping.

The jacking head has been redesigned so the jacking feet will operate beyond the ends of the crossties, making it necessary to spot the machine for the tamping operation only. The rail dogs for the jacking operations are completely automatic and catch the rail when the jack feet engage the ballast.

The tamping heads on either side of the machine are individual units raised and lowered on a pantograph arrangement operated by a hydraulic cylinder. This arrangement permits the tamping heads to close and open around the tie, which action is said to tamp the ballast directly under the tie, thereby providing a more positive tamping action.

The machine is equipped with a new eye-level telescopic sighting unit complete with a fixed target on the Jack-All itself and a movable spotboard mounted on rollers to operate on the track ahead of the unit.

The Jack-All is equipped with a 75-hp. water-cooled engine which drives four hydraulic pumps that furnish the fluid for all hydraulic controls. The machine is propelled with a hydraulic motor through a two-speed transmission •



Bolts Help Reduce Slides

A rock anchor bolt and plate designed to reduce the dangers from rock slides by reinforcing rock formations has been announced by the Bethlehem Steel Company, Bethlehem, Pa. According to the manufacturer these rock anchor bolts act in shear to resist slippage of rock strata and in tension to increase the frictional resistance between the strata by bolting the layers together. The strata thus stabilized act as cribbing to prevent additional slides from above.

The rock anchor-bolt assembly consists of a steel rod 1 in. in diameter in lengths from 2 ft. to 10 ft., a regular square or heavy hexagon nut, a steel wedge, and a steel plate either 6 in. or 8 in. square and $\frac{3}{8}$ in. thick

It is stated that any rock-handling

crew can be trained to install these rock anchor bolts. To install them a hole is drilled in the rock layer, using a pneumatic drill. The wedge is inserted in the slotted end of the anchor bolt and the bolt is inserted through the opening in the rock anchor plate and placed in the hole. The bolt is then driven to refusal by the drilling device used to form the hole, thus forcing the wedge deep into the slotted end of the bolt, and exerting tremendous pressure against the sides of the hole and anchoring the bolt securely. The last step in the procedure is to bolt the anchor plate firmly against the rock by tightening the nut on on the other end of the bolt.

The company states that, where special rock conditions necessitate the use of larger or longer bolts than usually furnished, special orders can be supplied as needed•

Crane and Rock Shovel

American Hoist & Derrick Co., St. Paul, has introduced a new unit, the Model 750 shovel, which is rigged for all-purpose work—crane, clamshell, dragline and backhoe. As a shovel and backhoe the machine is rated 1½ cu. yd.; as a crane the rated capacity is 35 tons; and as a clamshell or dragline it is rated at 2 cu. yd.

Among the exclusive features claimed for the new model are the single-purpose shaft assemblies, each of which may be removed without disturbing the others. To retain the maximum strength of the various shafts, multiple-tooth involute splines are used, which facilitate assembly and disassembly. The machine is equipped with anti-friction bearings and air-controlled clutches which are said to reduce operating effort by as much as 60 per cent.

The machinery arrangement is said to leave the deck free for routine maintenance. Lubrication has been simplified by banking the lubricating devices centrally or locating them in easily seen places. The car body, roller path and bull gear are integrated into one heavy steel casting. Bevel drive gears are enclosed and run in oil. Steering is by means of multiple-jaw clutches. Crawler shoes are of alloy steel with a double wall for increased strength.

For quick preparation for shipment crawler side frames slide in on the axles for minimum road or rail clearance. They may be removed along with the counterweight and front-end attachments to reduce load weights to facilitate over-the-road trailer hauling •

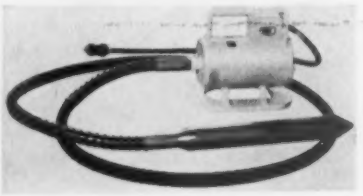
Gradall with Crawler Mounting

New features incorporated in the recently introduced crawler-mounted Gradall are said to provide increased maneuverability in tight quarters or on swampy terrain. This machine, a product of the Gradall division of Warner & Swasey Co., Cleveland, is also reported as being especially adapted for use with work trains.

Two 1,300-r.p.m. hydraulic motors geared down to 40 r.p.m. furnish 44 hp. to power the boom and the crawler through an all-hydraulic drive which eliminates most of the cumbersome deck machinery and excessive dead weight. A diversion valve pedal and two brake levers have been added to the five regular Gradall controls so that the operator has complete control of the crawler.

The unit has two speeds, ½ and 1 m.p.h., and is reversible, simply by reversing the flow of oil through the hydraulic motors. This feature eliminates the need for clutches. Either track may be locked or one or both coasted to permit greater maneuverability.

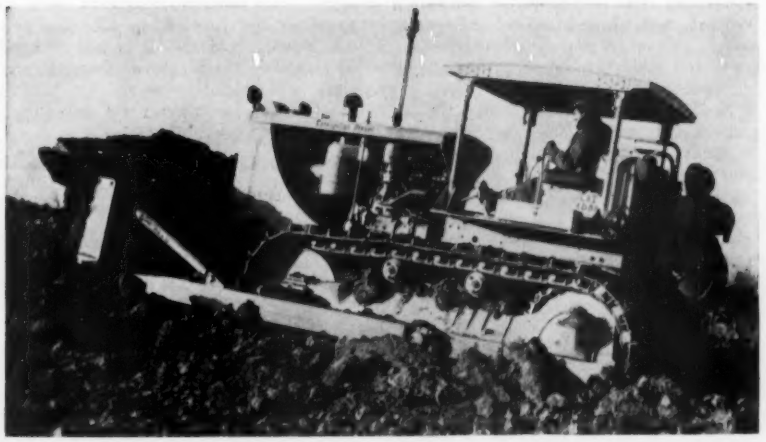
With standard 18-in shoes the machine is 8 ft. 2 in. wide and 10 ft. 1 in. long with a height to the top of the cab of 9 ft. 8¼ in. and a minimum under-clearance of 15½ in. It weighs 27,980 lb., which gives it a bearing pressure on the shoes of 8.4 p.s.i. Other optional shoe sizes are available at 27 in., 30 in., 36 in. and 48 in.•



Electric Concrete Vibrator

The White Manufacturing Company, Elkhart, Ind., has announced a new concrete vibrator, Model ME-130. The unit, designed to vibrate concrete while placement is in progress, is powered by a 2-hp. universal motor which operates on 110-volt a.c. or d.c.

Normal speed of the machine is from 7,500 to 8,000 r.p.m. The manufacturer says this speed avoids cavitation in concrete caused by speed so high that cement cannot flow rapidly enough to follow the vibrator. The ME-13 is mounted on either a rigid flat or a swivel base which keeps the motor above the ground so that dirt and sand cannot enter. The head is driven by a fully interchangeable drive section in lengths of 7 ft. and 12 ft. and no special section is required for the vibrator or the attachment of grinding spindles. It is stated that, because of a compensating joint, the flexible drive will not separate during operation, and that the drive can be used in any length for any depth of form•



D2 and D8 Cats Improved

New Models D2 and D8 Caterpillar tractors have increased horsepower, weight and engineering advancements, according to the Caterpillar Tractor Company, Peoria, Ill.

Drawbar horsepower of Model D2 has been increased from 32 to 35 with an increase of approximately 525 lb. in the weight of the machine. The overall length has been increased 6⅛-in. and two more track sections have been added. The increased length permits removal of the flywheel clutch without disturbing the engine. The seat has been moved forward to provide better access to the rear of the steering clutch case. Fuel-tank capacity has been increased from 20 to 26 gal. and heavy-duty fenders and an under-the-seat tool box have been added as standard equipment.

Model D8 is equipped with a Caterpillar diesel engine with a rated output of 185 hp. operating at a governed speed of 1,200 r.p.m. This new engine has a new cylinder head incorporating improved valve springs similar to those used in Caterpillar's V12 engines, valve rotators, valve-seat inserts of specially hardened metal for both inlet and exhaust valves, a new camshaft, stainless steel heat plug, oil pump mounted in the oil pan and driven from the front of the camshaft, oil-pressure throttle-control system, enlarged inlet manifold and a larger air cleaner.

The new D8 is said to develop a drawbar pull in first gear of 29,200 lb. with standard transmission and 39,800 lb. with the optional heavy-duty transmission. Forward speeds with the standard transmission range from 1.9 m.p.h. in first to 5.8 m.p.h. in fifth, while with the optional heavy-duty transmission these speeds are reduced to 1.4 and 5.0 m.p.h. respectively. Reverse speeds range from 1.9 m.p.h. in first to 5.8 m.p.h. in third for standard and 5.2 m.p.h. in third for the optional transmission. This model has an overall length of 16 ft. ⅛ in., and a shipping weight of 38,155 lb.•

Torque Wrench for Gate Arms

The Western Railroad Supply Company, Chicago, recently introduced a new method of measuring the torque of gate arms with the No. 3565-385N torque wrench. An extension and proper sizes of hexagon sockets are furnished with each wrench. The extension is required when the gravity torque of a gate arm is in excess of 280 ft.-lb. The wrench without the extension is used in taking horizontal torque readings, or torque readings on the gate arm when the value is less than 280 ft.-lb.

A typical application is the taking of horizontal position torque of gate arms of all lengths. The torque wrench is applied to the nut on the roadway gate arm shaft. Force is applied to the torque wrench to raise the gate arm 3 or 4 degrees from horizontal The exact gravity torque of the gate arm will then show on the torque wrench in foot-pounds. Taking vertical position torque is equally simple, except that the reading is taken while the gate arm is held in position after descending 2 or 3 degrees from vertical. The entire measuring operation can be performed from the ground •

Plastic Welding Helmet

A new seamless plastic welding helmet announced by the General Electric Company, Welding Department, Schenectady, N.Y., is said to provide both safety and comfort for the welder.

A wider range of head-size adjustments is provided with a ratchet-type device and a four-position stop which meets vertical and overhead needs and is said to provide a headgear to fit any head contour. The new helmet incorporates the maker's standard ventilation for cooler welding and prevention of lens fogging. The plastic shell is said to be light, strong, heat-resistant, moisture-proof and non-warping.

The helmet is available with or without a "flip-front," is finished in black and weighs 29 to 25 ounces, respectively, for the two models •

Self-Healing Rust Preventive

A new rust preventive, No-Oxid "400," has been announced by Dearborn Chemical Company, Chicago. This black, dry-to-the-touch, wax-type film is said to contain self-healing qualities. It may be applied by brush or it can be sprayed at 65 deg F. or higher. It is reported that the product, designed for one-coat applica-

tion, provides good penetration and superior hiding properties combined with excellent coverage. The manufacturer recommends its use for tracks and bridges as a heavy-duty protection against rust and corrosion •

Rotary Mower and Tractor

The hand tractor manufactured by Gravely Tractors, Inc., Dunbar, W. Va., is said to have been improved by replacement of the metal clutch with a banded non-metallic clutch. Other improvements include the muffler is redesigned to decrease noise and elastic stop nuts are used in the fabrication of assemblies to lessen the tendency of fastenings to loosen under stress. The rotary knife mower attachment has been improved by the addition of an extra knife, affording four cutting surfaces in the mower. Performance is said to be improved 100 per cent.

The oiling system has been adapted to the chain-saw attachment. Attached to the handle of the tractor, by means of a thumb-action pump it lubricates the chain of the saw while in operation.This, it is said, lengthens the life of the chain and improves operation in hard woods•

All Purpose Weed Killer

A new soluble powder form of a newly developed high-strength TCA-chlorate formulation, known as "Rite-O-Way" brand Sta-Klor, is announced by the General Chemical Division, Allied Chemical & Dye Corp., New York.

The maker states that this product provides easy and economical weed control with the use of regular labor crews in terminal yards, rip tracks, storage yards, driveways and other areas not accessible to spray-train treatment. It is said to give a thorough kill of both broad-leafed and grass weeds and other unwanted vegetation, and to suppress root growth and germination.

Sta-Klor is available in 100-lb. drums and may be used as a dust or a spray. In dusting 1 lb. is said to treat 200 sq. ft. being applied by any spreader or sifter. For spraying any hand or power sprayer is suitable; the mixture is applied at the rate of ½ lb. per gal. of water; 1 gal. of spray treats 100 sq. ft. •

Standby Generator

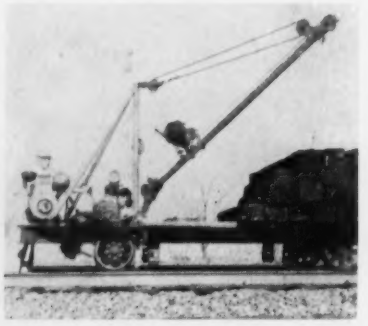
The Kohler electric plant Model 15E61, designed for standby use in dispatchers' offices, depots or wherever continuous electrical power is essential, has recently been equipped with a new emergency transfer switch of greater reliability. This switch, it is said, will insure instantaneous starting of the engine generator whenever normal power fails, and will automatically stop the unit and transfer the load back to the normal source when power is restored.

This completely self-contained standby generator unit is a product of Kohler Company, Kohler, Wis. The transfer panel and starting control are mounted on the unit.

Sealer for "Black Top"

The Barret Division of Allied Chemical & Dye Corp., New York, has announced a new rapid-curing compound for sealing bituminous surfaces such as station platforms, railroad crossings and parking areas. The product, Tarvia Bituminous Gel, is made from a processed base, selected fluxes and a filler. It is a heavy-bodied thixotropic gel that changes to a viscous liquid after stirring, in which state it can be applied with a squeegee.

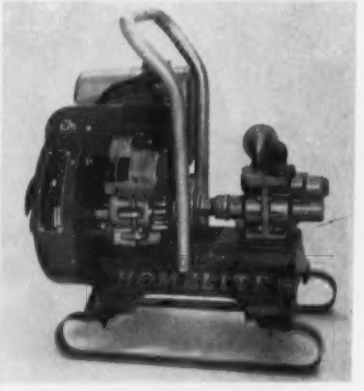
The manufacturer claims that Tarvia protects "black-top" pavements from the disintegrating action of water, salts and petroleum products such as gasoline and lubricating oil. The new compound, it is stated, is not affected by normal temperature changes and thus will not become sticky in hot weather or be injured by freezing•



Material Crane

A new track crane said to be particularly effective for handling crossties, bridge timbers, concrete pipe, frogs, switch points, signals, signal boxes, small powered machines, and supplies, has been developed by the Kershaw Manufacturing Company, Montgomery, Ala.

The crane is equipped with a single drum hoist driven by an 8-hp. gasoline engine which delivers a 500-lb. pull to a single line. The boom, with a 270-deg. swing and 10-ft. working radius, may be raised or lowered by a hand-operated winch. The unit, weighing 3,000 lb., is self propelled by a hydraulic motor. It is equipped with side set-off wheels for ease in removal from the track •



Lightweight Pressure Pump

A new lightweight, positive-displacement pressure pump for fire protec-

tion in railroad service has been announced by the Homelite Corporation, Port Chester, N. Y. The new Model 5P operates at from 250 to 300 p.s.i.

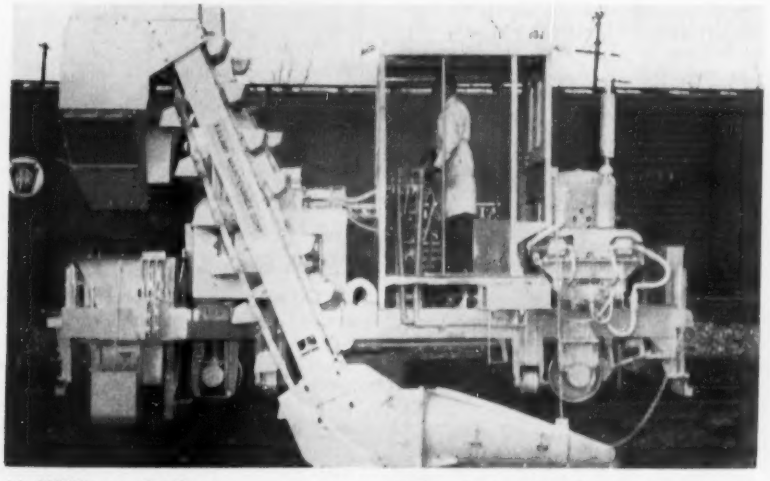
Weighing 29 lb., the pump has automatic priming and an automatic bypass said to be adjustable over the complete range of the pump. Capacity is 12 gal. per min. at open discharge, 11 gal. per min. at 250 lb. pressure, and 10 gal. per min. at 300-lb. pressure. Shut-off pressure is at 320 p.s.i. Powered by a Homelite single-cylinder air-cooled, two-cycle gasoline engine, the 5P pump is rated 4.5 hp. at 4,750 r.p.m. •

Mobile Welding Outfit

Schramm, Inc., West Chester, Pa., announces a self-propelled crawler-welder which includes a 300-amp. General Electric welder mounted on a crawler tractor, designed to operate in cramped quarters. It has a speed from 1 to 11 m.p.h., with four forward speeds and one reverse.

The unit is powered with a Ford V-8 engine with a displacement of 240 cu. in. and an operating speed of 2,000 r.p.m.

The welder drive is obtained through a heavy-duty Spicer power take-off from the Ford transmission. This steps the speed up to 2,400 r.p.m., and a V-belt drive steps the welder speed up to 3,500 r.p.m. The machine has an overall length of 90 in., a width of 32⅞ in. and weighs approximately 3,200 lb. •



McWilliams Ballast Distributor Improved

Improvements made in the McWilliams ballast distributor as a result of two years' experience in its operation have resulted in better production, greater versatility of operation and decreased maintenance costs, according to the manufacturer, the Railway Maintenance Corp., Pittsburgh.

The bucket conveyor booms have been lengthened to facilitate transfer of ballast from one side of the track to the other and to get improved bucket efficiency. The hopper openings have been enlarged to accommodate the increased volume of ballast that can now be handled. Interchangeable pumps provide increased operating speed. Hydraulic brakes have been added. Power set-off jacks and transverse wheels have been provided for removing the machine from the track. Long wearing cast buckets of improved design and additional wear plates have been provided. Improved visibility and piping in the cab, plus the addition of platforms and hand railings aid operator's safety and efficiency. A controlled-flow sander is said to eliminate wheel slippage and insures uniform working speed of the machine •

New Line of LeRoi Loaders

A new line of LeRoi Transo front-end loaders—featuring power steering, torque converters and reversing planetary transmissions as standard equipment—has been announced by LeRoi Company, Milwaukee, a subsidiary of Westinghouse Air Brake Company. These loaders will shortly be available with ½ to 1½-cu. yd. bucket capacities.

This new line has a patented bucket-rocking action and scooping motion of the lift arms, which, it is reported, will assure full bucket loading without tire spinning and other undue strain on the loader. The bucket-rocking action is actuated by the hydraulic lift and bucket cylinders. These have been placed well behind the dirt-agitating area to provide extra reach. It is said that this rocking action is greatly assisted by the positive traction of the loader.

The planetary type reversing transmission and torque converter have been designed to permit rapid power transmission at a very low torque. The installation of a spring-loaded clutch on the outside of the transmission is said to cushion shock load-

ing. A low 36 to 48-in. normal carrying position for the bucket has been provided to increase operator vision. The compact grouping of the torque convertor, engine, transmission and clutch at the rear of the unit has been designed to permit easy access and maintenance. All sizes are powered by LeRoi heavy-duty engines. However they will also be available optionally with diesel engines.

Model TLF-150 has been equipped with a four-wheel-drive at a low center of gravity and is reported as capable of moving to discharge points at a speed of 18 m.p.h.•

Metal Highway Crossing

Blaw-Knox electro-forged grating, a product of the Blaw-Knox Company, Pittsburgh, has been adapted as a material for railway-highway crossings. This grating, of open-mesh construction, is said to provide a non-skid highway crossing.

The sections of the grating are easily removable, which permits spot tamping of ties without disturbing the entire crossing. It is said that the grating feature is self ventilating, so sun and wind can quickly melt or evaporate snow or water•

Portable Set-Off

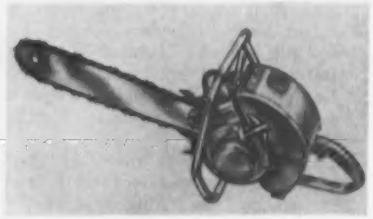
Easy removal of on-track maintenance-of-way work equipment weighing up to 14,000 lb. and with wheel bases less than 8 ft. is claimed for a new portable setoff unit manufactured by the Kershaw Manufacturing Company, Montgomery, Ala.

The set-off consists of a welded steel frame assembly made up of three separate parts which, it is stated, are easily assembled and disassembled to move from one location to another. One part is a self-contained welded frame with four adjustable legs which are used for holding the equipment in the off-track position. To this adjustable frame two removable runners are connected extending from the frame over the track itself. On top of these units is mounted another frame equipped with four rollers which are arranged to fit into a grooved track mounted on the adjustable frame and runners. Attached to this four-wheel carriage is a run-off which rests on the rails of the track.

To set a piece of equipment off the track the machine is run up on the four-wheel carriage where chocks are placed on all the wheels. The carriage is then pushed along the two running rails to the main set-off. After the machine is in the clear, the two runners are removed •

Clutch-Equipped Engine

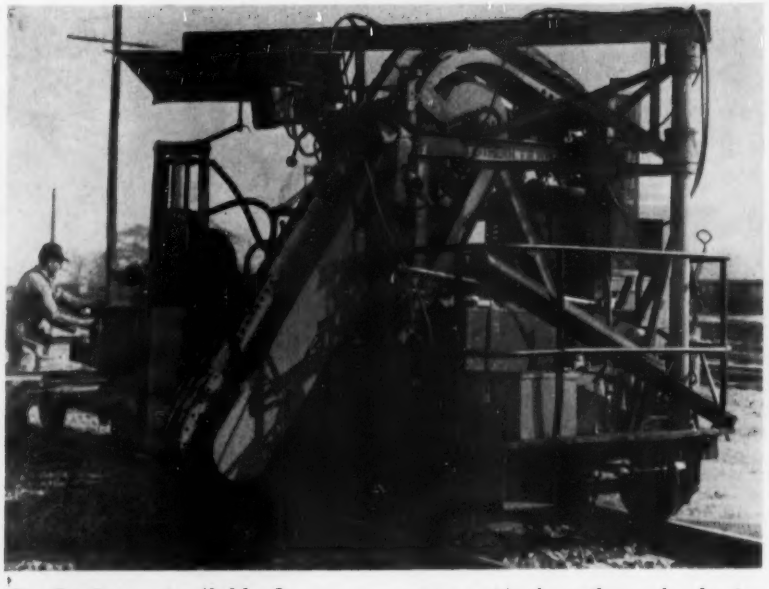
The new model of the K160 air-cooled engine manufactured by the Kohler Company, Kohler, Wis., is Model K160C. Engineered into this model is a new hand clutch which is said to increase its field of application. This model, a single-cylinder, 4-cycle engine, equipped with oil bath air cleaner, ball bearings, oil bathed fly-ball governor, fuel filter, silencer muffler and 1¼-gal. fuel tank, is said to provide 6.6-hp. at 3,600 r.p.m., 6.3-hp. at 3,000 r.p.m., 5.1-hp. at 2,400 r.p.m., and 3.7-hp. at 1,800 r.p.m. •



New Homelite Chain Saw

Lighter weight, faster cutting, and easier handling are said to be features of the new chain saw manufactured by the Homelite Corporation, Port Chester, N.Y. Designated the Model 17, the new saw weighs 22 lb. and is rated 3.5 brake horsepower.

Other features of the Model 17 include an automatic clutch, all angle diaphragm carburetion, positive chain lubrication, quick starting and weatherproof ignition system. Straight blades are available in sizes from 15 in. to 36 in. Plunge-cut bow-saw attachments, for one or two-man operation, are available in 14-in. and 18-in. sizes •



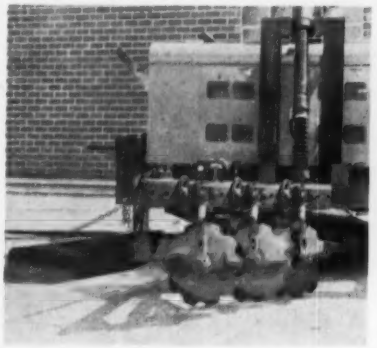
Tie Replacer Available Soon

A new machine for replacing ties has been developed and will be in production by early summer, according to the Railway Maintenance Corporation, Pittsburgh. It is said that this machine embodies several new principles that have resulted in a reduction in the cost of tie renewals. The primary advantage claimed for it lies in its flexible chain ram which cuts a bed for the new tie as it pushes out the old tie.

The pilot model is said to have been in service on over 90 miles of track and to have installed about 23,000 ties. The overall production was reported to be a tie per minute, although the average time on several stretches of track was said to be 50 seconds per tie. It is further stated that it is possible to renew ties with this machine without raising track, that it does not foul an adjacent track while working and may therefore be used on inside tracks of multiple-track territories if additional laborers are provided to place new ties in position and remove old ties that are not loaded on push cars.

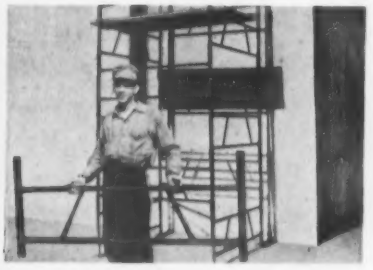
The machine will be hydraulically operated and controlled by one man with the assistance of two laborers. Its sequence of operation consists of spotting the ram opposite the tie to be replaced; clamping the machine to the track; raising the track and machine slightly to clear the tie plates (from which spikes have been previously removed) by means of two lifting cylinders; lowering the ram roller guide track over the old tie; pushing out old tie; fastening the new tie by means of a strap engaged in prebored spike hole in new tie; returning the ram through the crib, thereby pulling new tie into place square with the rails; and releasing the ram, roller track, lifting cylinders, and rail clamps ready for move to the next tie.

This machine will be equipped with power jacks and transverse set-off wheels, lights for working at night, horn, hydraulic brakes, enclosed operator's cab, safety indicator lights to show position of rail clamps and roller track, a sanding device for traction, and optional boom and push car for attachment to the front of the machine for loading an additional classification of ties as removed. It will be powered by a three-cylinder diesel engine driving three interchangeable hydraulic pumps. Two hydraulic motors are interchangeable, one for propelling the machine, and the other to drive the ram through a cone drive reduction unit •



Ballast Car Improved

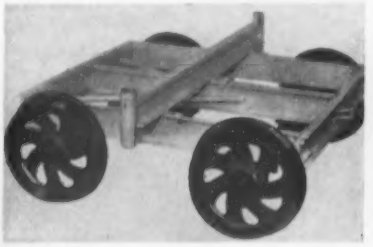
An improvement has been made on the tool mounting of the W77 Series A ballast-maintenance car by the installation of large hydraulic cylinders for raising and lowering of the various work tools, according to Fairmont Railway Motors, Inc., Fairmont, Minn. It is said that these new hydraulic controls simplify the installation and make accurate control of the position of the tools easier and quicker •



Steel Scaffolding

A new scaffolding system, designed for heavy and light construction, painting, carpentry and industrial maintenance application, is now being manufactured by the Brainard Steel Division of the Sharon Steel Corporation, Warren, Ohio.

The scaffold has one basic part, a standard tubular steel frame; however, the manufacturer claims that with a very few accessories the frame will cover the full range of scaffolding applications. Four of the standardized frames form a 5 ft. square section which is 4 ft. high. Multiples of such sections can be assembled to form towers, long runs of scaffolding and many other structures. An exclusive slip-fit design permits one frame to be inserted into another without the use of fasteners of any kind or tools •



Push Car

A new heavy-duty rail push car with a load capacity of 20,000 lb. is the product of the Woolery Machine Company, Minneapolis. This car is equipped with chilled-face heavy-duty wheels, 2½-in. divided axles, double-row ball bearings and a drawbar connection at both ends. It is of 6-in. channel bolted construction, with a wheel base of 40 in.; frame length and width of 61 and 52 in., respectively; and a bolster width of 75 in. •

HERE'S A

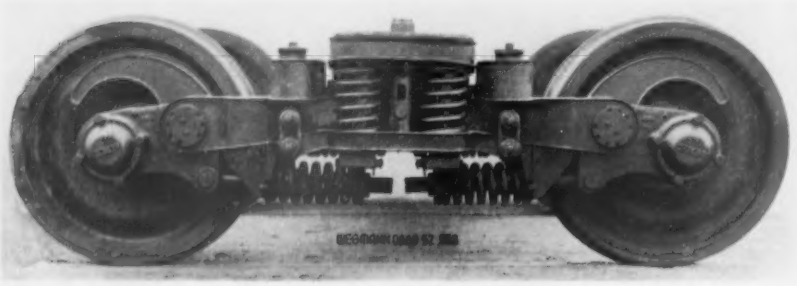
REVOLUTION

In Passenger Train Design

Part I

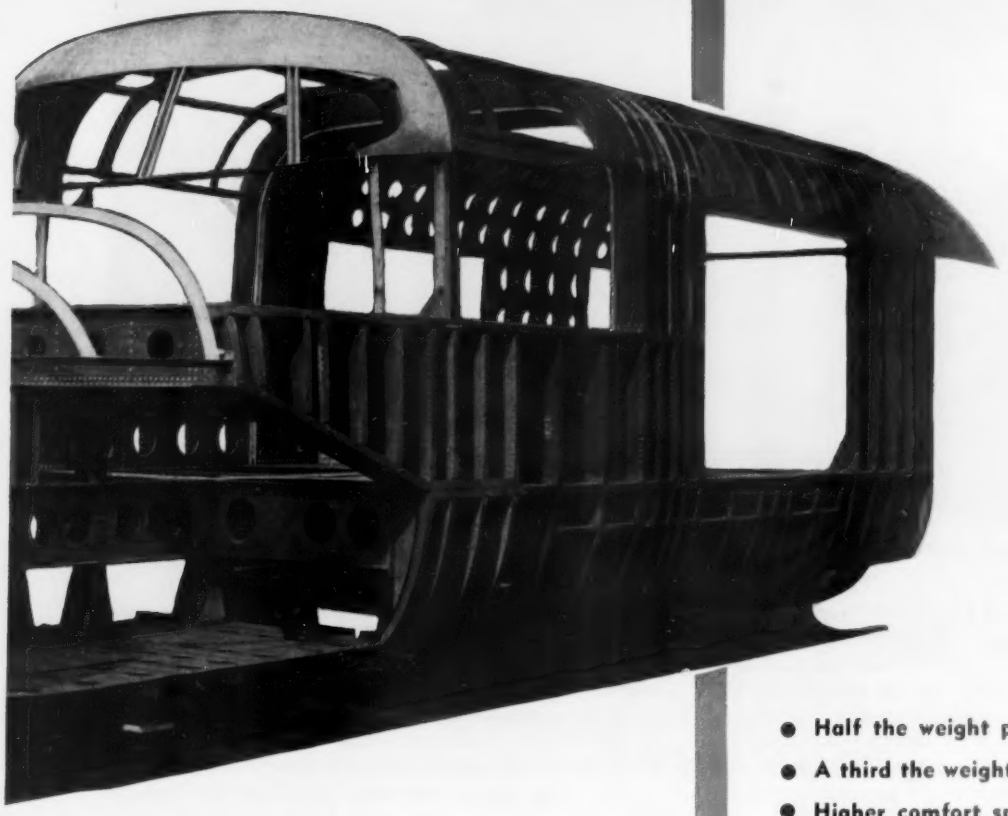
By Herman Bleibtreu

Two new German luxury trains built according to aircraft principles shatter the illusion that light weight impairs passenger safety or riding qualities



LEFT — PIVOTED JOURNAL BOXES have been found to be the best method to reduce shimmy by keeping the axles exactly perpendicular to the rails at all times. (Wegmann photo)

POWER CARS AT BOTH ENDS permit reversing direction without turning the train around.



- **Half the weight per berth**
- **A third the weight per seat**
- **Higher comfort speed on curves**
- **Truck designs eliminate shimmy**
- **Single-axle trucks on one train**
- **Strength without center sills**
- **Air and water lines part of structure**
- **Collapsible members absorb impacts**
- **Single seats on one side of coaches**
- **Power cars to pull and push**

Two new seven-car motor trains—with berth accommodations equaling the best American sleeper trains, and coach seating not surpassed by the finest American chair-car trains—have been installed on a 530-mile run between Germany and Switzerland. These trains not only weigh only 44 per cent as much per berth and a third as much per coach seat as de luxe lightweight American equipment, they further provide more space per passenger and less total train length for a given number of comparable accommodations!

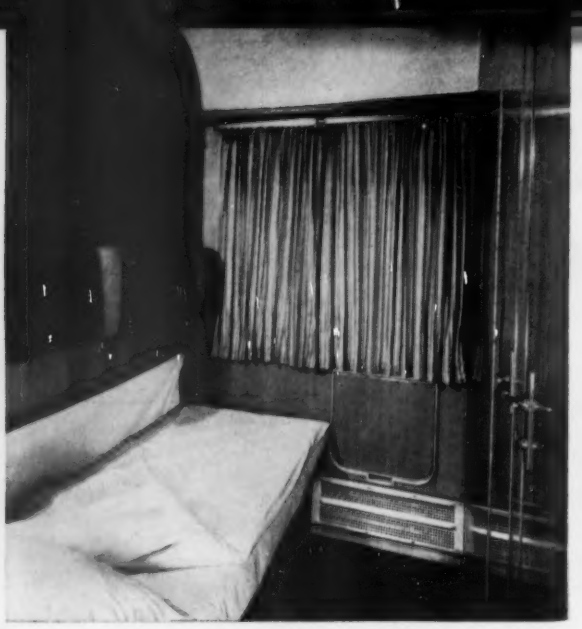
These startling achievements have been attained without sacrifice of passenger safety or riding quality. In fact all laws of logic indicate that the trains should give greater protection to the riders as well as a vastly improved ride. The trucks, having no pedestals and consequently no "play," will eliminate or at least substantially reduce that most disagreeable of all motions—shimmy.

Body structure is designed along advanced engineering principles long accepted and proved in aircraft. There are no center sills. The bottom, sides and roof are integrated to form a tubular structure of high columnar, bending, torsional and compressive strength. Special self-sacrificing members are incorporated in each end to absorb the energy of collision impact by plastic deformation.

The sleeper train has two-axle swivel trucks like U. S. trains, though of a radically different design. Single-axle trucks are used throughout the day train except for one two-axle power truck at each end.

Tests made of the comparative riding qualities of the two trains revealed some surprising results. The single-

COMPLETE APPOINTMENTS of the new passenger train include a bar. (Wegmann photo)



SECOND-CLASS tickets entitle rider to single occupancy of roomette or double occupancy of bedroom (Wegmann photo)

axle truck proved superior to the two-axle truck in riding qualities insofar as control of horizontal movements was concerned on conventional jointed track, and was only slightly inferior in controlling vertical movements. On welded rail, however, the single-axle truck rode better from the standpoint of both horizontal and vertical movements. As the horizontal motion is the more disagreeable of the two, the average person would probably prefer the ride of the single-axle truck on either type rail.

Both the day and the sleeper trains have a diesel-hydraulic power car 58 ft. long at each end with five 40-ft. trailer cars in between. The entire train in each case is articulated and two-directional; it does not have to be turned at the end of its run. Regardless of the direction the train is running, the front power car pulls and the rear pushes, with both power plants controlled from the operator's station. (Pushing trailers is common to all modern European motor trains, as well as to multiple-unit equipment on electric lines in this country).

The inside height and width are about the same as U.S. cars, or some nine inches higher and four inches narrower than the Talgo. The floor is 33½ in. above the rails, or about half way between the 18¾ in. of Talgo and the standard 51 in. It is thus adaptable to either high or low platform loading.

The day train has six seats in one of the power cars, 24 in the other, and 105 seats in four of the five trailers, a total of 135. The fifth trailer is a kitchen car in which hot meals are prepared electrically for airplane style service at coach seats. The chairs are cushioned by foam rubber and have Perlon covering to permit wet sponging.

Two characteristics of the seating arrangement distinguish it from American practice. First, all seats but the 24 in power car B face each other—the conventional European style—which does, however, simplify serving meals on tables to the passenger at his seat.

The second distinguishing characteristic is the two-and-one seating arrangement in the trailers. Like the facing seats, this layout reduces capacity, but it should increase passenger appeal, especially to the person traveling alone who wishes to read or study en route. Should double seats be installed on both sides of the aisle, as on U.S. coaches of equal width, seating capacity would be increased to 170.

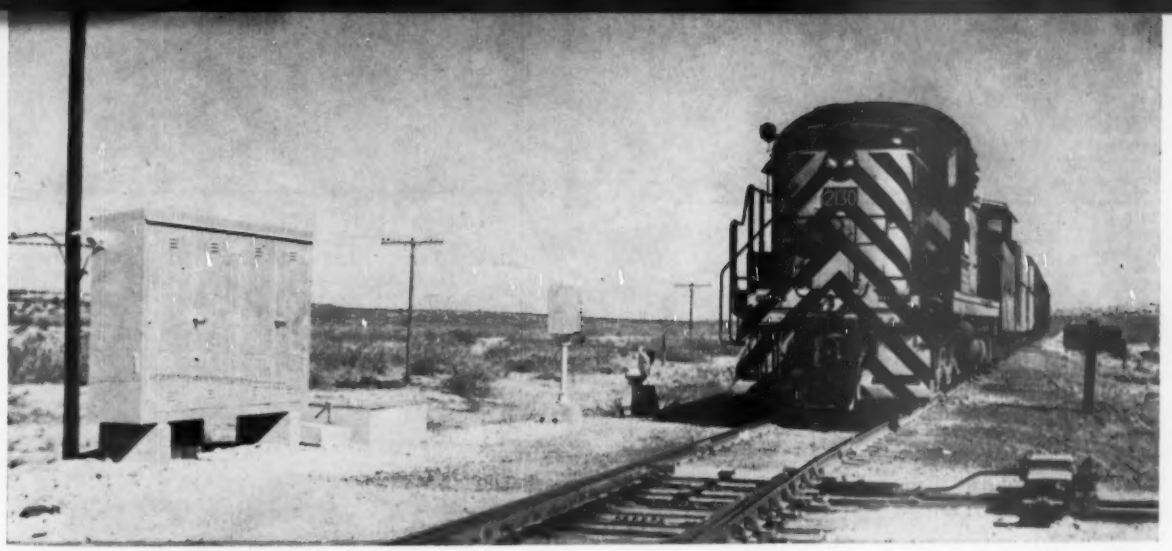
Interior appointments of the night train are comparable to our all-room streamliners, featuring bedrooms and roomettes and providing a total of 40 beds. The chief difference from domestic practice is that first-class tickets are required for single occupancy of a bedroom only; second-class tickets entitle the rider to a roomette or to double occupancy of a bed room. Snacks and drinks are served in a bar car in the center of the train. Twelve coach passengers can be accommodated in reclining seats in power car A.

(Part II of this article is scheduled to appear in the March 29 Railway Age.)

WEIGHT PER PASSENGER OF NEW TYPE TRAINS

	Light weight in tons#	Number of Accommodations	Lightweight, lb. per seat‡ lb. per bed§	%	Rated hp. per ton
I. DAY TRAINS					
1. Streamline U. S. train—2,400-hp. diesel-elec. loco., 6 cars	520	300 seats	3,680	100	4.3
2. German lightweight train—2,000-hp. diesel-hydr. loco., 6 cars	345	300 seats	2,300	62	5.8
3. Budd cars (one RDC-1, one RDC-2)	108.5	127 seats*	1,720*	47	8.1
4. New German motor train (7 cars)	97.6	170 seats†	1,150†	31	6.6
II. SLEEPER TRAINS					
1. Streamline U. S. train—Two 2,400 hp. diesel-elec. locomotives, 8 cars	877	144 beds (24 bedrooms, 96 roomettes)	12,200	100	5.5
2. New German motor train (7 cars)	108	40 beds (8 bedrooms, 24 roomettes)	5,400	44	5.9

* With reclining seats and 45-in. centers
† With 2&2 seating arrangement
# Averages from Car and Locomotive Cyclopedias
‡ Day trains
§ Night trains



SWITCH is operated by remote control radio from the cab of the diesel.

OPERATED BY ENGINEMAN . . .

Radio Controls This Power Switch

Portable Pakset transmitter in locomotive cab controls power switch for a mine-run train on the Santa Fe at Carlsbad, N.M.

The Santa Fe has developed a new application of radio, by which the engineer in a locomotive cab is enabled to use "push-buttons" to control a power switch machine. A road switcher brings loaded cars from mines on a branch line to the yard at Carlsbad, N. M. Local conditions made it desirable to eliminate train stops to operate the hand-throw switch stand where the yard lead joins the main track. Radio control was designed to actuate an electric switch machine which was installed along with a conventional spring-switch oil buffer mechanism.

Normally the switch is lined for the main track. When the mine-run train departs from the yard it trails out through the switch, utilizing the spring switch phase of the operation. No train stop, and no action by the crew, is required to operate the switch for this move.

For a train coming from the mines, the power switch machine is controlled by radio from the locomotive. In the cab is a modified portable Pakset equipped with two audio oscillators. This Pakset transmitter is placed on the locomotive when it goes to the mines, and is removed on its return to Carlsbad Yard. This Pakset has two small toggle type levers, or keys, one colored red and the other green. When either key is thrown, power is turned on.

When an approaching train is approximately a mile from the switch, the engineman operates one of the keys on the Pakset. The red key causes the Pakset to transmit on 1,735 cycles. Impulses are received at the switch location by radio apparatus and amplified to control a relay which causes the power switch machine to line the switch for the train to enter the yard, and then clear the signal accordingly. If the engineman throws the green key, the Pakset transmits on 2,080 cycles, which controls the switch machine to line the switch for the main track (if not already in that position).

RELAYS and receiver for the radio-controlled switch are contained in this case.

Track circuits in approach to and through the switch control electric locking to prevent operation of the switch when a train is passing over it.

In addition to the control from a locomotive, this switch can also be operated by a member of a train crew on the ground at the switch. Near the switch is a cast-iron box with a switch padlock. Inside this box are two push-buttons. When a trainman pushes the "reverse" button the switch is operated to line up for the yard lead. Or, when the "normal" button is pushed, the switch is lined for the main track.

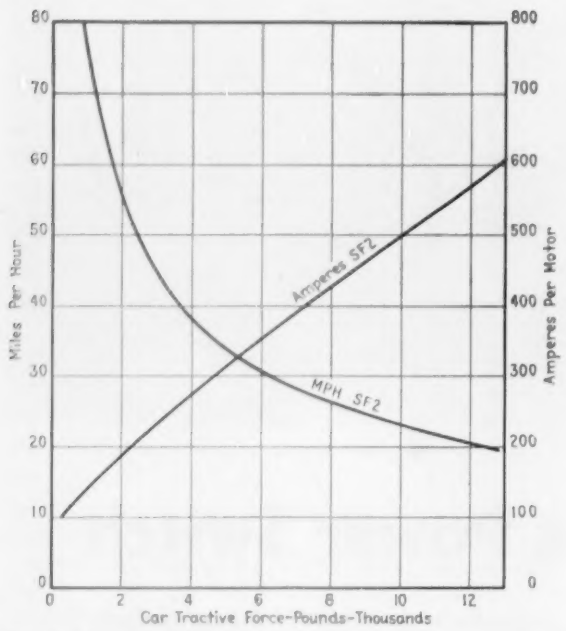


Fig. 1—Car performance curve a.c. zone—six cars per train.

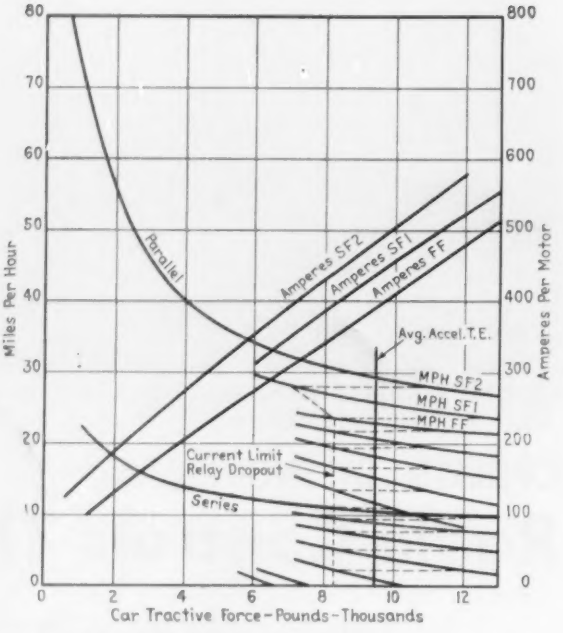


Fig. 2—Notching curve third rail zone, 650 volts d.c.

New Haven Installs Ignitron

Propulsion equipment which will take a.c. power from the contact system and supply controlled d.c. power to the motor is installed on 100 electric motor cars

By E. W. AMES, W. M. HUTCHISON and V. A. MOORE, Jr.

Early this year the first of an order of 100 new multiple-unit cars went into commuter service on the electrified lines of the New Haven. Their outstanding feature is the use of Ignitron rectifiers to convert alternating current collected from the trolley to direct-current for operation of d.c. traction motors.

This is apparently the first application in the world of this type of equipment in quantity. Its use follows naturally from the excellent results which have been obtained with Ignition rectifier type motive power on a trial multiple-unit car in service on the Pennsylvania since 1949, followed by four locomotive units (nominally rated 3,000 hp. each) which have been in operation on the same railroad since early in 1952.

This type of equipment, which embodies the advantages of high-voltage a.c. transmission with the superior characteristics of low-voltage d.c. motors, is also well adapted for operation on the New Haven, where the cars operate for 11.76 miles between Grand Central Terminal in New York and Woodlawn, N. Y., over New York Central tracks, taking energy from the 650-volt d.c. third rail.

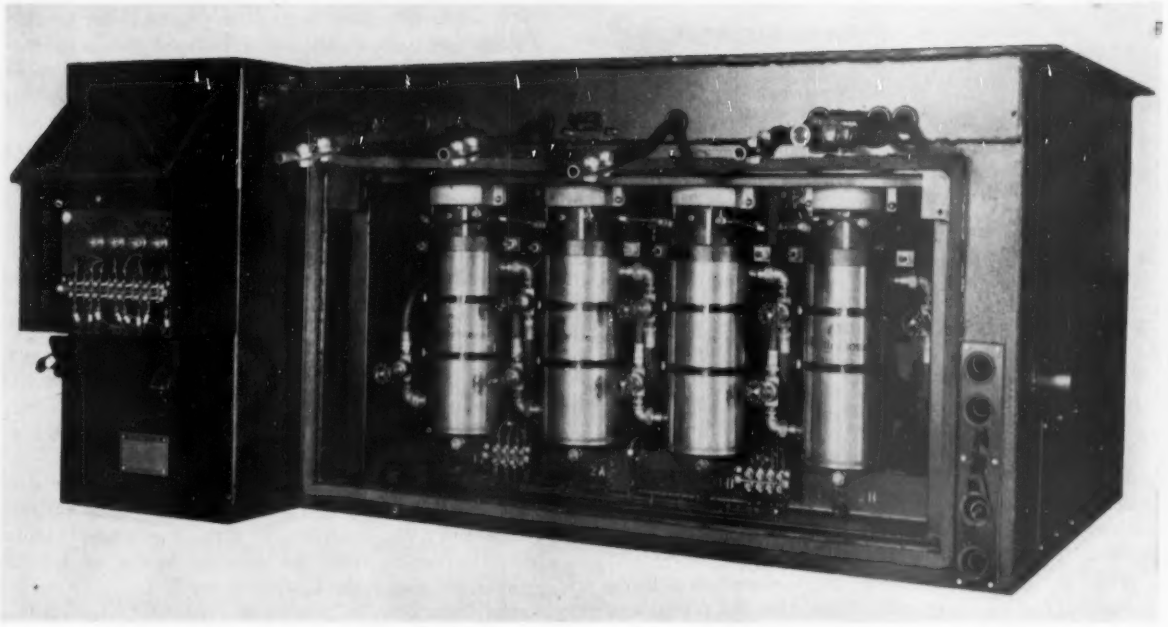
Authors are all with Westinghouse Electric Corporation, East Pittsburgh, Pa.

The new cars, built by the Pullman-Standard Car Manufacturing Company at Worcester, Mass., weigh 81.5 tons without load and seat 120 passengers. Air conditioning and automatic heat control are incorporated to assure passenger comfort in all seasons. In contrast to existing motor cars, which employ hand acceleration and operate with trailers, the new cars are all equipped with four 100-hp. motors and accelerate automatically at a fixed rate of 1.0 m.p.h. per sec., based on an average load of 60 passengers. All-motor-car operation involves a minimum of terminal switching, assures uniform accelerating rates, and provides the greatest protection of equipment and schedules in case of failure of one car in a train.

The equipment is capable of operating in either local commuter service or in express service, up to a maximum speed of 80 m.p.h.

Fig. 1 illustrates the performance of a typical 6-car train operating from the 11,000-volt a.c. trolley. Fig. 2 shows the performance from the 650-volt d.c. third rail.

The major portion of the main and auxiliary circuits are the same whether the car is operating in the a.c. or the d.c. zone. Only the power supply differs. In the d.c. zone, the changeover switch connects the traction



Ignitron equipment box, rectifier tube compartment.

M.-U. Cars

motor circuits and the d.c. auxiliary circuits between the third rail shoes and ground. In the a.c. zone, the change-over switch connects these same traction motor and auxiliary circuits between the Ignitron tube cathodes and the transformer mid-point through the main d.c. reactor.

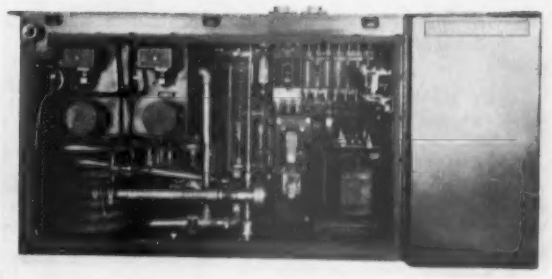
In both the a.c. and d.c. zones resistor acceleration with transition is used. Transition is the bridging type similar to that used in a number of previous 650-volt commuter and rapid transit applications. Two steps of field shunting are used. The acceleration is automatic at a fixed rate under the control of a limit relay. Interlock progression type of control is used.

The rectification is accomplished by means of a full wave rectifier connection from single-phase, 25-cycle power.

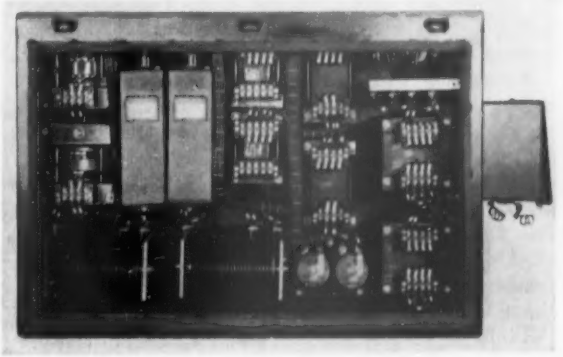
The Traction Motors

The traction motors are self-ventilated, with single reduction gearing and flexible couplings. These motors are 325 volt. d.c., series-wound, commutating pole with field control, and insulated for operating two in series on a maximum of 750 volts. The motors are designed for suspension from the truck transom and for coupling by gear type couplings to the gear units which are mounted on the axles and supported at the motor side by suspension bolts. These motors are very similar to the motors supplied for rapid transit service in New York.

The main transformer is an Inerteen-filled 380-kva. transformer with an Inerteen-to-air heat exchanger. One thousand cu. ft. per min. of air is used for cooling.



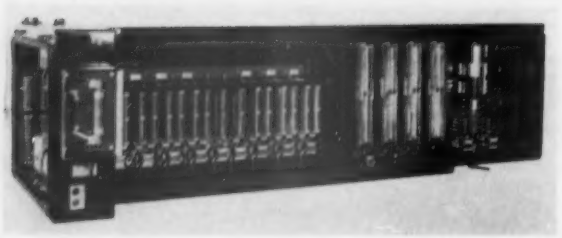
Ignitron equipment box, regulator compartment.



Ignitron equipment box, excitation circuits.

The transformer is 52¾ in. wide, 29¼ in. high, 94⅜ in. long, and weighs 7,840 lb. The primary winding is 11,000 volts, 25 cycles. The secondary voltage from the mid-point to either end is 780 volts, with one tap brought out at 226 volts from the transformer secondary mid-point for a.c. auxiliary circuits.

The a.c. filter consists of a capacitor and resistor in



Main and auxiliary control box, front view.

series connected across the entire transformer secondary to suppress the induced currents in telephone lines adjacent to the electrified lines in the a.c. zone of operation.

The rectifier cubicle has been constructed in *T* form. It is 29 in. high, 65 in. long, and 49 in. at its widest part. Three felt-sealed, lift-off covers are provided for access to maintain equipment. The rectifier cubicle mounts under the car and weighs a total of approximately 1,880 lb.

Four Ignitron rectifier tubes are mounted on a frame insulated and shock-mounted from the main box construction. The tubes are water-cooled by a closed-circuit cooling system. Insulation to ground is provided by using a 13-ft. rubber hose to the inlet and the discharge header of the rectifier tube frame. The water system is protected in winter by antifreeze. The water temperature is regulated by a temperature-sensing device which controls a three-way valve. The water temperature is held between 108 and 122 deg. F. by the position of the valve, which diverts the water through the radiator for cooling or by-passes the remainder around the radiator to retain the heat in the water.

The valve and regulator are so designed that part of the water may by-pass the radiator so that the temperature of the supply water changes according to the load demand of the rectifier. The water pump and radiator are located externally to the rectifier cubicle. An expansion tank, with immersion-type water heaters, is mounted in the rectifier cubicle. If the water temperature falls below 77 deg. F., the water heaters are turned on automatically.

Should the temperature of the water fall below 41 deg. F., the transformer secondary switches are held open until the water temperature rises above 41. This is necessary because the rectifier tube is susceptible to surging when operating at low temperatures. At temperatures above 131 deg. F., the rectifier tube is susceptible to arc-back. Thermal relays are mounted on each tube to open switches when the tube jacket temperature reaches 131. A low-water pressure switch is mounted on the tube inlet water manifold to open the switches if the inlet water pressure falls below 15 lb. Normal pressure is approximately 35 lb.

The radiator for cooling the water is located in the transformer and reactor blower air intake. The air temperature is raised approximately 9 deg. F., then utilized in ventilating electrical equipment. The water cooling system is the same as used on the experimental rectifier car which has been in operation over 4½ years, and on the rectifier locomotives which have been in service over 2 years. It has been found that the water system requires very little maintenance and will operate for a reasonably long period of time without trouble.

There are two excitation circuits of the non-linear reactor type located at one end of the rectifier cubicle. The protective breakers for the excitation circuits are in the cubicle. Misfire lights, one for each tube, have been provided to enable maintenance personnel to check the rectifier operation.

The major portion of the control equipment is mounted in the main and auxiliary control box. The box contains the electropneumatic switches which serve as the a.c. and d.c. line switches, field shunting switches, the switches which short out accelerating resistance steps and those that set up the series and parallel motor combinations. Also mounted in the box are the reverser, a.c.-d.c. changeover switch, operating and protective relays, auxiliary circuit breakers, electromagnetic contactors for the car heaters, indicating lights, and an a.c. and a d.c. watt-hour meter.

The reverser and a.c.-d.c. changeover switch are of the drum type, each operated by an air engine through a rack and lever. Each can be thrown manually without removing covers from the box by means of handles extending through the bottom of the box.

The limit relay is a statically balanced, quick-acting device. It is set to give the desired accelerating current. The setting is not affected by vibration or road shock. Equipment boxes are grounded by being bolted to the car frame.

Auxiliary Circuit

Direct-current, 650-volt motors fed from either Ignitron power or the third rail are used for all auxiliaries which are required in both the a.c. and d.c. zones. The car heaters are also supplied from Ignitron power or the third rail.

The transformer and reactor blower and the transformer Inerteen pump are required only for a.c. operation. Their motors are capacitor-start, capacitor-run induction motors which are fed from a 226-volt tap on the transformer secondary.

The Ignitron water heaters and anode heaters are fed from the third rail in the d.c. zone and from the 226-volt transformer tap through a 226- to 650-volt insulating transformer in the a.c. zone.

Low voltage d.c. for control, low-voltage auxiliaries and battery charging is supplied from the generator of the motor-generator set.

Letter from A Reader

Favors Government Ownership

SANGERFIELD, N.Y.

TO THE EDITOR:

For many years I have been a reader of Railway Age. I believe that the railroads of the United States of America should be owned and operated by the government.

WM. CARY SANGER, JR.

(All available evidence points to the conclusion that government operation adds to the railroads' difficulties, rather than subtracts from them. We are, therefore, unable to join in the opinion expressed by Mr. Sanger.—EDITOR)

Supply Trade

Chester S. Stackpole has been appointed general sales manager, heating and cooling division, **Union Asbestos & Rubber Co.,** at Chicago.

Herbert F. Middleton, district sales manager of Acme Steel Products division of **Acme Steel Company,** at San Francisco, has been named western area sales manager at Los Angeles, succeeding **Squire J. Johnson,** who has assumed new duties with the parent company. Mr. Middleton's successor is **William H. Smythe, Jr.,** special representative, who in turn has been replaced by **Charles G. Moreau.**

Glenn A. Parker, manager of the diesel engine department of the Kansas City, Mo., branch of **Fairbanks, Morse & Co.,** has been appointed branch manager there, succeeding **W. W. Guernsey,** retired.

Walter J. Eichman, district sales representative of the **Electro-Motive Division** of **General Motors Corporation** in the Chicago region, has been promoted to district sales manager of that region. Named as parts sales manager is **Marvin Anderson,** general parts manager, while **Fenton D. Lapham,** director of production control and purchasing, becomes parts supply manager.

Martin Ettington, Alco products director of engineering, **American Locomotive Company,** has been appointed general manager of engineering, at Schenectady. He will be in charge of all product engineering activities at each of Alco's six plants.

A. Barr Comstock, Jr., manager of sales of the Philadelphia district of **Pittsburgh Screw & Bolt Corp.,** has been made general manager of sales, at Pittsburgh. **Charles M. Sutlive,** manager of sales of the southeastern district, at Savannah, succeeds Mr. Comstock at Philadelphia.

Joseph S. Pelles has been appointed sales manager, transportation industries, **Lewis-Shepard Company.** For the past three years he has been a staff member for American Trucking Associations, and was secretary of

NORMAN E. BATESON, who has been appointed deputy director of research of Pullman-Standard Car Manufacturing Company (*Railway Age*, February 22).

R. N. TURNER, who has been appointed railroad sales manager of the LeTourneau-Westinghouse Company at Peoria, Ill.

Selected Income and Balance-Sheet Items of Class I Steam Railways in the United States

Compiled from 126 reports (Form IBS) representing 130 steam railways.

(Switching and Terminal Companies Not Included)

Income Items	United States For the month of October 1953	1952	For the ten months of 1953	1952
1. Net railway operating income	$107,331,350	$120,997,874	$952,692,103	$856,877,237
2. Other income	21,296,242	16,942,002	191,793,321	177,439,123
3. Total income	128,627,592	137,939,876	1,144,485,424	1,034,316,360
4. Miscellaneous deductions from income	4,168,715	3,964,110	39,559,932	40,594,166
5. Income available for fixed charges	124,458,877	133,975,766	1,104,925,492	993,722,194
6. Fixed charges:				
6–01. Rent for leased roads and equipment	6,263,609	6,417,511	62,344,883	64,353,137
6–02. Interest deductions[1]	27,302,364	26,939,439	271,725,402	266,585,036
6–03. Amortization of discount on funded debt	275,670	251,427	2,526,941	2,494,050
6–04. Total fixed charges	33,841,643	33,608,377	336,597,226	333,432,223
7. Income after fixed charges	90,617,234	100,367,389	768,328,266	660,289,971
8 Other Deductions	2,938,671	3,047,952	28,873,469	29,737,716
9. Net income	87,678,563	97,319,437	739,454,797	630,552,255
10. Depreciation (Way and structures and Equipment)	42,682,178	41,406,159	418,375,376	402,169,321
11. Federal income taxes	57,178,847	84,211,928	537,452,324	504,447,929
12. Dividend appropriations:				
12–01. On common stock	23,188,644	20,248,721	214,337,950	187,055,079
12–02. On preferred stock	6,723,082	5,462,222	64,331,824	59,082,090
Ratio of income to fixed charges (Item 5 ÷6—04)	3.68	3.99	3.28	2.98

Selected Expenditure and Asset Items	United States Balance at the end of October 1953	1952
17. Expenditures (gross) for additions and betterments—Road	$322,860,725	$320,437,018
18. Expenditures (gross) for additions and betterments—Equipment	746,496,089	796,737,448
19. Investments in stocks, bonds, etc., other then those of affiliated companies (Total, Account 707)	457,646,633	482,323,588
20. Other unadjusted debits	96,311,650	87,201,044
21. Cash	954,533,710	941,879,730
22. Temporary cash investments	1,050,920,070	984,959,355
23. Special deposits	70,798,885	85,786,539
24. Loans and bills receivable	3,339,583	1,094,848
25. Traffic and car-service balances—Dr.	63,472,730	70,763,717
26. Net balance receivable from agents and conductors	178,285,913	168,651,179
27. Miscellaneous accounts receivable	363,895,500	372,218,694
28. Materials and supplies	831,743,228	856,211,108
29. Interest and dividends receivable	17,985,329	15,526,715
30. Accrued accounts receivable	240,912,084	229,968,712
31. Other current assets	36,249,735	39,232,719
32. Total current assets (items 21 to 31)	3,812,136,767	3,766,293,316
Selected Liability Items		
40. Funded debt maturing within 6 months[2]	$197,448,992	$221,135,703
41. Loans and bills payable[3]	2,495,633	3,140,990
42. Traffic and car-service balances—Cr.	109,864,315	105,615,241
43. Audited accounts and wages payable	538,442,124	532,564,653
44. Miscellaneous accounts payable	227,502,377	217,025,361
45. Interest matured unpaid	29,151,359	30,102,217
46. Dividends matured unpaid	3,776,615	3,703,488
47. Unmatured interest accrued	80,528,527	83,437,105
48. Unmatured dividends declared	42,549,548	43,732,912
49. Accrued accounts payable	223,813,891	217,459,619
50. Taxes accrued	940,927,520	929,729,860
51. Other current liabilities	95,173,845	124,374,464
52. Total current liabilities (items 41 to 51)	2,294,225,754	2,290,885,910
53. Analysis of taxes accrued:		
53–01. U. S. Government taxes	733,489,649	737,618,847
53–02. Other than U. S. Government taxes	207,437,871	192,111,018
54. Other unadjusted credits	285,388,025	284,876,933

[1] Represents accruals, including the amount in default.
[2] Includes payments of principal of long-term debt (other than long-term debt in default) which becomes due within six months after close of month of report.
[3] Includes obligations which mature not more than one year after date of issue.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission.
Subject to revision.

the A.T.A. terminal operations council for more than a year.

D. W. McGeorge, vice-president and general sales manager of **Edgewater Steel Company,** has been named vice-president — sales, and **Walter M. Cree,** assistant general sales manager, has been promoted to general sales manager. **W. G. Heiner, Jr.,** and **V. P. Jakovac** have become manager and assistant manager, respectively, of railroad sales.

Henry T. Stetson, president of **Safety Car Heating & Lighting Co.,** has been elected chairman of the board, and has been succeeded as president by **Harold F. Kneen.** Mr. Stetson

Henry T. Stetson

Harold F. Kneen

became associated with the company in 1923 as attorney. He was elected director in 1924, vice-president in 1930, and president in 1951. Mr. Kneen, formerly executive vice-president, is a graduate of Cornell University. Prior to his association with Safety in 1952, he was vice-president of manufacturing and a director of Lincoln Electric Company.

OBITUARY

M. K. Tate, 67, assistant to president, Baldwin-Lima-Hamilton Corporation, at Washington, D.C., died in that city on March 5, from a heart attack.

New Facilities

Automatic Control of Switches in Subway

Electronic equipment, by means of which an approaching train will automatically control track switches and signals at junction interlockings, is to be installed on the Flushing line of the New York City subways. This electronic control is to be part of a new traffic control system on 10 miles of line between Times Square, in Manhattan, and Main street, in Flushing. It will be installed by the Union Switch & Signal Division of Westinghouse Air Brake Company. The project is the result of plans prepared by Col. S. H. Bingham, general manager of the New York City Transit Authority, for modernizing the subway system.

In the automatic control system, a tuned coil mounted on the leading car of each train makes electronic contact with a coil at the wayside "check point." This produces an electronic reaction which is transmitted to the traffic system to control the switch or switches ahead of the train. Also, identification of the train is transmitted to the control station and to station platforms so passengers will know what train will be the next to arrive.

When the new traffic control system is completed, the 10-mile Flushing line will be operated from two control points—one at Times Square and the other at 111th street. This will reduce the present 10 control points for switches and signals to two; will result in considerable financial savings, and should reduce train delays.

Station platforms, which now can accommodate trains with nine cars, are being lengthened to accommodate 11-car trains. The new signal system will allow operation over the line of 37 11-car trains an hour, as compared with a present maximum of 30 nine-car trains.

Canadian National. — An extension of the ore dock at Port Arthur, Ont., which will double the size of the dock to accommodate increased ore production at Steep Rock mines, is scheduled for completion in 1955. When the 660-ft. extension is completed, the dock will have an annual capacity of 4,000,000 tons. New ore yards are to be constructed at Port Arthur and at Atikokan, and centralized traffic control is being installed on the single track between Atikokan and Conmee while automatic block signals are being placed on the double track between Conmee and Port Arthur.

In the Canadian Rockies, automatic block signals are being installed over the 66.9-mile section of main line between Blue River, B.C., and Jackman. This project, scheduled for completion next August, will link up the 65.4-mile section of automatic block signals completed earlier between Jackman and Jaspar.

In Alberta, the Assiniboia Construction Company, Calgary, is rebuilding the substructure of the railway's Red Deer River bridge, which was damaged in April 1952, when river ice rose to unprecedented levels. The former bridge had an overall length of 1,500 feet, including approaches, and measured 152 feet from base of rail to water line.

In British Columbia, grading is 50 per cent completed on the new line between Terrace and Kitimat, the site of a new aluminum development. The substructure of the Skeena River bridge on the new line is about completed and superstructure work is in progress. The CNR hopes to have a track laid between Terrace and Kitimat before the end of this year. At Prince Rupert, a car loading apron is about completed. The apron will handle railway cars onto barges serving Ketchikan, Alaska, and other ports along the Pacific coast.

Canadian Pacific.—An automatic block system will be installed on 58 miles of the Brooks subdivision between Brooks, Alta., and Gleichen. The project is scheduled for completion by the end of October. At Penticton, B.C., work is progressing on construction of a refrigerated icehouse and ice manufacturing plant to serve the Okanagan Valley fruit growing district. The plant will be capable of

"CALIFORNIA ZEPHYR" STARS IN 2ND "CINERAMA" FILM

Two complete "California Zephyr" trains left Oakland for Chicago on February 22. The extra train was headed for a star role in "Cinerama Holiday," the second motion picture to be made in this new wide-screen technique.

For its part in the script, the "Zephyr" carries a young European couple through the scenic wonders of Feather River canyon and the Colorado Rockies. The film deals not only with what the couple saw, but also shows the life they led while traveling aboard an American streamliner. To prepare the train for its role, and to accommodate the special camera equipment required for the "Cinerama"' process, one of the vista-dome cars was stripped of its glare-proof safety glass and refitted with thin sheets of optically perfect plexi-glass so scenery could be filmed without color distortion or reflections. Aboard the train, in addition to the actors, producer's staff and a film company crew of 30, was a full normal complement of railroad operating and service personnel.

The picture is scheduled for release sometime in June.

storing 3,000 tons of ice under refrigeration, and will have a manufacturing capacity of 100 tons per day. Work will begin soon on the first stage of a bridge replacement project at Kootenay Landing, B.C., which involves construction of three new concrete piers on steel "H" piles; the shifting of two 150-ft. spans and one 80-ft. lift span onto new piers, and demolition of existing timber towers. The entire project will be completed by July 31, 1955.

Carferry slips are being constructed at Vancouver, B.C., and Nanaimo to accommodate the new ferry which will go into service in 1955. The new vessel, 416 feet long, will accommodate 28 freight cars on four tracks, or about 116 automobiles, in addition to 800 passengers. It will supplant the present tug-and-barge system that handles freight to and from Vancouver island.

Gulf, Colorado & Santa Fe. — I.C.C. Examiner Paul C. Albus has recommended that Division 4 authorize this road to construct a 48.5-mile cutoff to shorten its route into Dallas, Tex. Estimated cost of the construction is $5,398,721. Based on 1952 traffic, the road has estimated that operation over the proposed cutoff would have resulted in a total saving of $306,263.

Louisville & Nashville. — The bridge spanning Pearl river at the Mississippi-Louisiana state line will be reconstructed at a cost of $1,138,500. In connection with the New Orleans Union Passenger Terminal agreement, the L&N is currently rearranging trackage in the terminal district at a cost of $715,534. To handle ore trains between Mobile, Ala., and Birmingham, yard capacity at Mobile is being increased by relocating some 4,000 feet of double-track main line at a cost of $146,480. At Strawberry, Ky. (near Louisville), a 4,000-ft. industrial lead track is being constructed at a cost of $40,000. Two bridges will be eliminated in relocation of a portion of the Atlanta division's "Old Line" between Talking Rock, Ga., and Carns Mill. This project will cost $134,265. Track will be lowered in tunnels One, Five and Six on the Cincinnati division, at a total cost of $35,020.

McCloud River. — This road has applied to the I.C.C. for authority to construct a 22-mile rail line between Burney, Cal., and a point called Ditch Creek. The road also has asked for authority to acquire and operate a 10-mile segment between Ditch Creek and Pondosa. The new rail line would give the carrier access to an area in which timber reserves are estimated at more than four billion feet. The 10-mile existing segment of line is owned by the McCloud River Lumber Company, a firm which plans to begin timber operations at Burney. The lumber company has agreed to lend $1,500,000 to the McCloud River Railroad to finance the acquisition and new construction. This loan, with interest at 3½ per cent, will be subject to separate approval by the I.C.C.

Accounting

Depreciation Rates Fixed For Pennsylvania Equipment

Equipment depreciation rates for the Pennsylvania are among those prescribed by the Interstate Commerce Commission in additional sub-orders recently entered in the general proceeding, Depreciation Rates for Equipment of Steam Railroad Companies.

The PRR rates are: Steam locomotives, 4.04 per cent; other locomotives, 4.28 per cent; freight-train cars, 2.32 per cent; passenger-train cars, 3.07 per cent; floating equipment, 2.72 per cent; work equipment, 2.43 per cent; miscellaneous equipment, 11.44 per cent.

Financial

Young Files Suit Against NYC Board

Robert R. Young, chairman of the Alleghany Corporation, has filed in the New York Supreme Court a stockholder's action requesting an injunction to prevent the New York Central's 15 directors from spending "any money of the company for purpose of continuing themselves in office." The suit demands that directors repay money already spent by the NYC for hiring a publicity firm and professional proxy solicitors.

William White, NYC president, said the suit "shows Young is up to his customary tactics of trying to intimidate people. It shows what we have always known, that Young doesn't want to have a fight unless his opponent is disarmed."

Directors of the railroad, Mr. White added, "have a responsibility to protect the interest of the stockholders and that's what they are doing. In employing public relations counsel and proxy solicitors, they are protecting the interest of the stockholders of the company as is customary when predatory interests threaten the welfare of a property."

Canadian National. — *Buys Montreal Telegraph Company.*—The CNR will buy, for $3,000,000, 22,000 miles of telegraph line and appurtenant facilities owned by the Montreal Telegraph Company, principally in the provinces of Ontario, Quebec, New Brunswick and Nova Scotia. The CNR and its predecessor companies have operated the lines for over 70 years under a 97-year lease, the balance of which will be wiped out by the purchase agreement.

Chicago, Aurora & Elgin.—*Dividend from Sale Funds.*—A dividend approximating $5.29 a share has been unanimously approved by stockholders. The dividend would disburse some $2.5 million of the $3.1 million realized from sale of land and trackage in connection with a superhighway project (*Railway Age*, February 1, page 28). Actual disbursement of the funds has been blocked, however, by: (1)

SAMUEL R. HURSH, chief engineer of the Pennsylvania, was guest speaker at the March 4 meeting of the Metropolitan Maintenance of Way Club, in New York. Mr. Hursh outlined in detail methods used in the PRR's comprehensive long-range program for selecting and training promising young engineering graduates for responsible positions, by employing them in various capacities in several departments, as well as in engineering and maintenance-of-way work. With Mr. Hursh, from left to right, are: Miles Burpee, vice-president, *Railway Age*; Lester T. Burwell, president, Rails Co.; Frank Speno, Jr., president, Frank Speno Ballast Cleaning Co.; Mr. Hursh; J. P. Hiltz, chief engineer, m. of w., New York Central, and John Vreeland, vice-president, *Railway Age*.

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All RACOR TIE PADS (unless specifically ordered otherwise) are coated with a special sealing compound which is stable over a wide temperature range. This seals the pad to the tie and prevents the entrance of foreign materials, such as sand, dirt and water between the pad and the ties, thus assuring maximum protection to the wood immediately under the pad.

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Action of the Illinois Commerce Commission, and (2) an injunction issued by Superior Court Judge Frank M. Padden in Chicago (*Railway Age*, February 22, page 75).

Inland Waterways Corporation.—*Transfer of Operating Rights.*—The I.C.C. has granted a 30-day delay, from March 15 to April 15, for IWC to complete the transfer of its properties to the new owner, Federal Barge Lines, Inc. The commission's original approval set the March 15 deadline. More time was requested by the parties because preparation of the scattered property has been found to require a great deal of time.

Minneapolis & St. Louis.—*Group Seeks Seven Directorships.*—A group of stockholders claiming ownership of "more than 200,000" of the 589,035 shares of stock outstanding, is soliciting proxies for election of seven of its members to the M&StL board of directors.

A spokesman for the group, Ben W. Heineman, a Chicago corporation attorney, has issued a press statement in which he said: "We seek majority representation on the board now because the road's major investors were refused minority representation and an opportunity to put into effect a detailed and specific program for improvement in operations and returns to stockholders."

New York, Ontario & Western.—*Trustee.*—The I. C. C. has ratified court appointment of Lewis D. Freeman as trustee of this road, and has fixed $15,000 per year as "maximum compensation." The new trustee, a former official with the Reconstruction Finance Corporation, will succeed Ferdinand J. Sieghardt (*Railway Age*, February 22, page 75).

Northern Pacific.—*Oil and Gas Agreements.*—George M. Washington, head of the road's oil development department, has announced four additional agreements under which exploratory wells will be drilled. They include: Shell Oil Company, in Fallon county, Mont.; Heep Oil Company, in Golden Valley county, Mont.; Stanolind Oil & Gas Co., in Billings county, N.D.; and W. H. Hunt, in Stark county, N.D. This latter drilling will be within sight of the NP's main line near Dickinson.

Wisconsin Central.—*Reorganization.*—Division 4 of the I.C.C. has authorized this road to issue bonds and common stock, and assume liability for equipment obligations, as a final step in carrying out its reorganization. Capitalization of the reorganized company has been set at $58,947,900, and effective date for the reorganization is July 1, 1952.

The Canadian Pacific has applied to the I.C.C. for authority to acquire control of the WC upon consummation of the latter road's reorganization. The reorganization plan provides that the CPR, together with the Soo Line, which CPR controls, will emerge with a "substantial portion" of WC common stock. The I.C.C. did not pass upon the control question when it gave final approval to the reorganization plan.

Equipment & Supplies

FREIGHT CARS

3,974 Freight Cars Delivered in February

New freight cars delivered in February for domestic use totaled 3,974, compared with 4,944 in January and 7,780 in February 1953, the American Railway Car Institute and the Association of American Railroads have announced jointly.

Orders for 2,057 new freight cars were placed in February, the announcement said, and cars on order and undelivered on March 1 amounted to 25,441, compared with 27,959 on February 1. A breakdown of types of cars ordered and delivered in February, and of cars on order March 1, follows:

Types	Ordered Feb. '54	Delivered Feb. '54	On Order & Undelivered Mar. 1, '54
Box—Plain	103	984	9,224
Box—Auto	0	0	1,000
Flat	0	345	1,487
Gondola	0	961	1,984
Hopper	0	620	2,427
Covered Hopper	0	423	2,102
Refrigerator	1,725	280	4,284
Tank	217	277	2,754
Caboose	10	7	85
Other	2	77	94
TOTAL	2,057	3,974	25,441
Car builders	2,047	2,947	12,311
Railroad shops	10	1,027	13,130

The **Burlington Refrigerator Express Company** has ordered 200 50-ton steel refrigerator cars from the Pacific Car & Foundry Co. These cars originally were ordered from BRE's own shops (*Railway Age*, December 21, 1953, page 14).

The **Chicago Great Western** has ordered two 70-ton tank cars from the American Car & Foundry Co. at an estimated cost of $26,000. Delivery is scheduled for next June.

The **Pacific of Mexico** (Ferrocarril del Pacifico) has ordered 300 50-ton box cars from the Pullman-Standard Car Manufacturing Company, and 60 70-ton hopper ballast cars from the Magor Car Corporation.

The **Union Refrigerator Transit Lines** (division of the General American Transportation Corporation), has ordered from G.A.T.C. 800 40-ton refrigerator cars. Delivery is expected to begin in the latter part of the second quarter of this year.

The **Western Fruit Express Company** has ordered 250 50-ton end-bunker steel refrigerator cars from the Pacific Car & Foundry Co. The cars originally were ordered from WFE's own shops (*Railway Age*, December 21, 1953, page 14).

LOCOMOTIVES

The **Pacific of Mexico** (Ferrocarril del Pacifico) has ordered four 1,600-hp. diesel road units from the American Locomotive Company.

The **Southern Pacific** has ordered one 50-ton, 450-hp. diesel unit from the General Electric Company. The unit, for use on the three-ft.-gage line between Keeler, Cal., and Laws—about 71 miles—will replace two steam locomotives when delivered next September.

Labor & Wages

No Strike on Michigan Central

A strike on the Michigan Central district of the New York Central, originally set to start at 6:30 a.m. March 11, was called off at 2 a.m. of that day. The strike was cancelled by an agreement between the railroad and the Brotherhood of Railroad Trainmen calling for submission of all grievances to Special Referee Frank B. Douglass, former member of the National Mediation Board.

Securities

Applications

CENTRAL OF NEW JERSEY.—To assume liability for $1,980,000 of equipment trust certificates, to finance in part seven diesel units and four self-propelled passenger cars. Estimated total cost of this equipment is $2,500,000. The road advised the I.C.C. that the Budd Company will build the passenger cars, but a final determination has not been made on who will build the diesel units. The certificates, dated April 1, would mature in 15 annual installments of $132,000 each, beginning April 1, 1955. They would be sold by competitive bidding, with the interest rate to be set by such bids.

ILLINOIS CENTRAL.—To assume liability for $6,300,000 of series "39" equipment trust certificates, to finance in part 1,500 new box cars costing an estimated $8,700,000. The cars, to be constructed at IC shops, Centralia, Ill., will cost approximately $5,800 each. The certificates, dated April 1, would mature in 30 semi-annual installments of $210,000 each, beginning October 1, 1954. They would be sold by competitive bidding, with the interest rate to be set by such bids.

WESTERN PACIFIC.—To sell without competitive bidding $22,500,000 of 30-year, 5 per cent, income debenture bonds. As part of a recapitalization plan, the road proposes to distribute the debentures to its preferred stockholders. The latter would get the bonds in exchange for 225,000 of their shares on a basis of $100 of bonds and one-fifth share of common stock for each share of the $100 preferred. Income bonds not thus taken up would be sold to underwriters and

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the proceeds used to call the balance of the 225,000 shares of preferred. Also called for redemption would be the remainder (83,211 shares) of the preferred, of which a total of 308,211 shares are now outstanding.

Authorization

LOUISVILLE & NASHVILLE.—To assume liability for $1,995,000 of series M equipment trust certificates, the second and final installment of a $9,645,000 issue. The initial installment of $7,650,000 was sold in August 1953. The present certificates will be used in acquisition of 250 95-ton ore cars costing an estimated $2,505,000 (*Railway Age*, February 8, page 80). Division 4 approved sale of the certificates at 99.1776, based on interest at 2½ per cent, which will make the average annual cost of the proceeds to the road approximately 2.64 per cent. Winning bid for the issue was by Salomon Bros. & Hutzler and three associates. The certificates, dated as of August 15, 1953, will mature in 15 annual installments of $133,000 each, beginning August 15, 1954. They were reoffered to the public at prices yielding from 1.3 to 2.7 per cent, according to maturity.

Security Price Averages

	March 9	Prev. Week	Last Year
Average price of 20 representative railway stocks	62.17	61.71	68.42
Average price of 20 representative railway bonds	94.24	94.38	94.92

Dividends Declared

AKRON, CANTON & YOUNGSTOWN.—common, $2.50, semiannual, payable April 1 to holders of record March 15; 5% preferred, $2.50, semiannual, payable April 1 and October 1 to holders of record March 15 and September 15, respectively.

ALLEGHENY & WESTERN.—guaranteed, $3, semiannual, payable July 1 and January 3, 1955, to holders of record June 21 and December 20, respectively.

CLEARFIELD & MAHONING.—$1.50, semiannual, payable July 1 and January 3, 1955, to holders of record June 21 and December 20, respectively.

DAYTON & MICHIGAN.—common, 87½¢, semiannual; 8% preferred, $1, quarterly, both payable April 1 to holders of record March 15.

MAINE CENTRAL.—6% prior preferred, $1.50, quarterly, payable April 1 to holders of record March 24.

MINNEAPOLIS & ST. LOUIS.—30¢, payable March 15 to holders of record March 10.

NORWICH & WORCESTER.—8% preferred, $2, quarterly, April 1 to holders of record March 15.

SEABOARD AIR LINE.—80¢, quarterly, payable March 26 to holders of record March 12.

Railway Officers

Freeman Confirmed as Trustee of NYO&W

The Interstate Commerce Commission has confirmed the appointment of Lewis D. Freeman as trustee of the New York, Ontario & Western (*Railway Age*, February 15, page 33; February 22, page 75). Mr. Freeman was born at Gettysburg, Pa., July 11, 1888, and began his career as machinist apprentice with the Baldwin Locomotive Works at Philadelphia. He later served as draftsman for the Baltimore & Ohio; chief draftsman for the Kansas City Southern; shop superintendent and assistant superintendent motive power of the Seaboard; and assistant chief mechanical officer and assistant superintendent motive power of the Chesapeake & Ohio. After serving as consulting engineer at Richmond, Mr. Freeman joined the Reconstruction Finance Corporation as examiner in 1938 and became head of its Railroad Section in 1947.

Wesson Heads C&S

E. G. Wesson, general superintendent of the Burlington at Burlington, Iowa, has been elected vice-president of this subsidiary at Denver, Colo., succeeding Arthur J. Horton, who has retired. Mr. Wesson joined the Burlington as a signalman and assistant foreman in 1911. Subsequently, he became general foreman; engineer—signal department; assistant signal engineer; trainmaster; assistant to general manager; superintendent; general superintendent at Lincoln, Neb., and, in 1950, general superintendent at Burlington.

E. G. Wesson

ALABAMA, TENNESSEE & NORTHERN.—C. A. McLeod, supervisor bridges and buildings at York, Ala., has been appointed trainmaster there.

ATLANTIC COAST LINE.—**H. H. Cook,** assistant general freight agent, has been appointed general freight agent, and **W. D. Wright** has been named assistant to general freight agent, both at Wilmington, N.C.

ASSOCIATION OF AMERICAN RAILROADS.—**A. P. Kivlin,** chief of the Container Research and Development Laboratory at the A.A.R. Research Center in Chicago, has been appointed chief engineer of the Freight Loading and Container Bureau in that city, succeeding **Edward J. Dahill,** who has retired after 33 years of railroad service to become director of market research for the Fourdrinier Kraft Board Institute at New York.

Born in North Attleboro, Mass., in 1892, Mr. Kivlin was graduated from the University of Rhode Island and attended the Harvard Graduate School of Business Administration. After serving as an engineer with the A.A.R. Freight Container Bureau for 21 years, Mr. Kivlin left the association in 1944 to become a supervisor of freight loss and damage prevention activities on the New Haven. He rejoined the A.A.R. in 1951.

BELT RAILWAY OF CHICAGO.—Lawrence J. Brasher, master mechanic, who has been advanced to superintendent motive power at Chicago.

BURLINGTON.—**W. A. Spitzenberger** has been named industrial agent at Chicago to succeed **L. R. Myers,** retired.

CANADIAN NATIONAL. — **Edward L. Hewson** has been promoted to assistant superintendent at Smithers, B.C.

W. A. Charles, general storekeeper of the **Grand Trunk Western** at Battle Creek, Mich., has been appointed manager of stores for the CNR at Montreal, succeeding **Samuel D. Sneddon,** who retired February 28, after 51 years' railroad service.

E. J. Healy, assistant marine su-

BESSEMER & LAKE ERIE.—Charles L. Patterson, vice-president of the Duluth, Missabe & Iron Range at Duluth, has resigned from that position and has been named a vice-president of the B&LE at Pittsburgh.

CANADIAN NATIONAL.—Robert H. Tarr has been appointed secretary of the company at Montreal, as reported in *Railway Age* March 1.

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perintendent has been appointed marine superintendent, Newfoundland services, at St. John's, Nfld., succeeding **Capt. M. G. Dalton,** retired.

E. J. Hase, assistant superintendent at Sudbury, Ont., has been trans-

W. A. Charles

ferred to the Smiths Falls division, succeeding **W. R. Nichol,** who replaces the late **B. J. Mahan** as assistant superintendent, Montreal terminals, at St. Luc.

CANADIAN PACIFIC. — H. I. Saunders, district passenger agent at Toronto, has been appointed assistant general passenger agent at Winnipeg, succeeding **A. M. Johnston,** who retired February 28, after 48 years with the CPR. **Alex Stewart,** general agent at Montreal, has been promoted to district passenger agent at Calgary, succeeding **W. Robson,** who succeeds Mr. Saunders at Toronto. **M. Mulroy,** assistant general agent at Chicago, has been named general agent at Montreal.

Harry Arkle, general freight traffic manager at Montreal, has been appointed European general manager at London, effective April 1, succeeding the late **J. C. Patteson** (*Railway Age,* January 18). **P. E. Croghan,** foreign freight agent at Boston, has been transferred to Detroit, succeeding **M. J. Flynn,** who has retired after 33 years of service. **A. R. Miller,** chief clerk at New York, succeeds Mr. Croghan as foreign freight agent at Boston.

CANTON.—Robert W. Dale, Jr., has been appointed assistant to traffic manager at Baltimore, and **Henry H. Lee, Jr.,** has been named foreign freight agent.

CENTRAL INDIANA.—Bayard H. Roberts has been appointed secretary at Philadelphia.

CENTRAL OF GEORGIA. — George W. Stradtman, general passenger agent at Savannah, has been appointed general agent there, and will handle both freight and passenger matters.

CHESAPEAKE & OHIO.—As reported in *Railway Age* February 22, **Thomas J. Deegan, Jr.,** vice-president (passenger traffic and public relations), has resigned. Mr. Deegan's former duties have been assigned as follows: Public relations — **Howard Skidmore,** director of public relations; passenger traffic—**H. T. Askew,** passenger traffic manager; advertising—**Walter S. Jackson,** advertising manager.

CHICAGO GREAT WESTERN. —J. J. McLaughlin has been named assistant general freight agent at Minneapolis, succeeding **D. W. Quick,** whose promotion to general freight agent at Minneapolis-St. Paul was noted in *Railway Age* March 1.

CHICAGO & NORTH WESTERN.—W. R. Wagner, division engineer at Escanaba, Mich., has been transferred to Antigo, Wis., to succeed **R. D. Ransom,** who has retired.

R. E. Halverson and **Earl C. Hunter** have been named general agents at Fargo, N.D., and Vancouver, B.C., respectively. Mr. Halverson succeeds the late **C. J. Krupich,** while Mr. Hunter replaces **G. W. Killam,** who has been transferred to Seattle, Wash., as a result of the resignation of **J. F. McNamara.**

DENVER & RIO GRANDE WESTERN.—J. C. Kenefick, assistant superintendent at Salt Lake City, has been appointed manager of service at Denver.

ELGIN, JOLIET & EASTERN.—J. W. O'Neill, assistant general superintendent at Gary, Ind., has been promoted to superintendent transportation at that point. Named as assistant superintendent transportation there is **J. R. Foreaker,** assistant to general superintendent, while **Frank H. Herrold,** who has been on special assignment, resumes his previous duties as superintendent of the Gary Mill division. **J. C. Jensen** becomes trainmaster of that division.

FLORIDA EAST COAST.—C. F. Reedy, superintendent air conditioning and steam heat equipment, has been promoted to superintendent car department at St. Augustine, Fla. **E. H. Schoedinger,** master mechanic, will have jurisdiction over both locomotive and car departments at Buena Vista, Fla. **John Sims,** general foreman, has been promoted to assistant master mechanic at Buena Vista.

Fred Kronenbitter has been appointed auditor disbursements at St. Augustine, succeeding the late **J. E. Quinn** (*Railway Age,* March 1).

FRISCO.—R. C. Canady, division superintendent at Enid, Okla., has been appointed train rules examiner at Springfield, Mo. His successor is **W. W. Francis,** superintendent terminals at Birmingham, Ala., who in turn has been replaced by **W. C. Salsman,** assistant division superintendent at Chaffee, Mo. **J. A. Chronister**

W. C. Salsman

W. W. Francis

transfers from Oklahoma City, Okla., to succeed Mr. Salsman, while Mr. Chronister's successor is **J. C. Cowles,** who transfers from Thayer, Mo. **H. A. Linderer,** assistant superintendent safety at St. Louis, replaces Mr.

Cowles. Named as assistant division superintendent at Neodesha, Kan., is **H. J. Lovelady,** who has been transferred from Newburg, Mo. Mr. Lovelady's successor is **K. E. Henderson,** trainmaster of the subsidiary Alabama, Tennessee & Northern at York, Ala.

H. W. Johnson, car accountant at Springfield, who retired January 1, had 50 years of service with the Frisco.

B. W. Baldridge has been appointed supervisor freight loss and damage prevention at Springfield.

GREAT NORTHERN. — A. N. Crenshaw, purchasing agent at St. Paul, has been promoted to the newly created position of director of purchases at that point. **H. B. Nordstrom** and **A. D. Sturley,** assistant purchasing agents at St. Paul, have been appointed purchasing agents there, while **L. F. Lohmann,** assistant purchasing agent at Seattle, becomes purchasing agent at that point.

Robert W. Downing, trainmaster at Kelly Lake, Minn., has been advanced to division superintendent at Minot, N.D., succeeding **Matthew L. Gaetz,** retired.

Robert W. Downing

GULF, MOBILE & OHIO.—T. C. Schley, assistant to vice-president at Mobile, has been appointed deputy comptroller, succeeding **J. S. Gibson,** who has retired after about 47 years of service.

Briefly . . .

. . . "Brother Joe" keeps 'em talking in Jasper, Alta. This is the third winter that "Brother Joe," a black bear, has hibernated under the east end of the wooden platform of the Canadian National's station there. Problem is whether he'll be good natured or "cross as a bear" when he awakens. Last year spring came early and "Brother Joe's" sleep wasn't as sound as it had been the year before. He left his "bed" earlier than usual, and Jasper residents provided handouts until nature had gotten far enough along to permit him to live off the country.

KANSAS CITY TERMINAL. — William W. Bell, assistant purchasing agent at Kansas City, Mo., has been advanced to purchasing agent at that point, succeeding **R. E. McClelland,** who retired January 31.

William W. Bell

LEHIGH VALLEY. — John P. Hammer, general baggage agent and manager of mail traffic at New York, retired under pension rules on February 28, after 49 years of service. **George C. Spahn,** general passenger agent, will assume supervision over baggage, mail and express traffic. **John H. Schmid,** passenger service representative, has been appointed assistant to general passenger agent.

MILWAUKEE. — J. G. Wetherall, assistant engineer at Milwaukee, retired February 15. Named as communications engineer at Chicago is **Donald L. Wylie.**

A. W. Dreutz, assistant to passenger traffic manager at Chicago, and **F. H. Campbell,** general car inspector at Milwaukee, retired February 28. Mr. Dreutz has been succeeded by **John K. Pain,** assistant to general passenger agent, who becomes assistant general passenger agent. **R. J. Daniels,** traveling freight agent at Portland, Ore., has been named general agent at that point, succeeding **E. E. White,** who becomes division freight and passenger agent at Spokane, Wash., to replace **J. R. Reagan,** who has retired.

MILWAUKEE.—Fred A. Barton has been appointed trainmaster, Chicago terminals, at Bensenville, Ill.

MISSOURI-ILLINOIS. — J. A. Schroder has been appointed general agent at Chicago, succeeding the late **W. J. Mitchell.**

MISSOURI-KANSAS-TEXAS. — C. A. Reynolds, division freight and passenger agent at Parsons, Kan., retired February 1 and that position has been abolished. Appointed to the newly created position of assistant general freight and passenger agent at that point is **D. R. Miller.**

NEW YORK CENTRAL.—Cedric S. Hill, assistant to manager power utilization, has been appointed manager of (locomotive) power utilization, succeeding **Harry D. Johnston,** whose appointment as superintendent at Buffalo was reported in *Railway Age* March 8. Mr. Johnston succeeds **Gregory W. Maxwell,** who has been appointed to the newly created position of general superintendent of the New York district. Mr. Maxwell is now attending the Advanced Management Program School at Harvard Business School, and will assume his new duties at New York on June 1.

Gregory W. Maxwell

H. F. Carey, trainmaster of the Boston & Albany at Beacon Park, Allston, Mass., has been appointed trainmaster of the NYC's Mohawk-Hudson division at Poughkeepsie.

Thomas H. Friedlin, timber engineer at New York, will retire April 1, after 43 years with the engineering and lumber department of the NYC. He will be succeeded by **F. J. Fudge,** assistant timber engineer.

NORTHERN PACIFIC. — P. M. Davison, Jr., has been appointed trainmaster at Jamestown, N.D., succeeding **S. A. Anderson,** transferred.

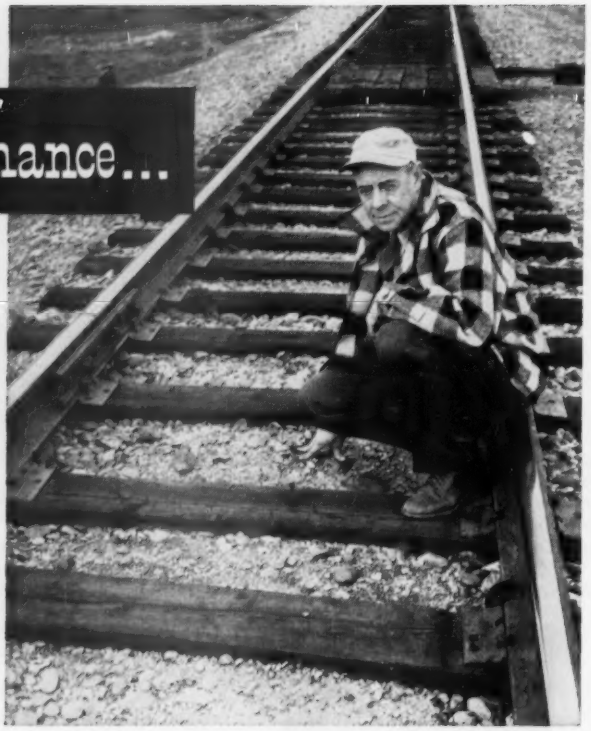
E. L. Jensen

E. L. Jensen, assistant general storekeeper, has been appointed gen-

(*Continued on page 83*)

Here's Proof of Performance...

Union Pacific tests Pressure-Creosoted Douglas Fir Ties... 2000 of 3000 in track *after 31 years*



W. L. SPITTLER, Union Pacific roadmaster, checks the condition of pressure-creosoted Douglas Fir ties in the test section on the main line east of Boise, Idaho.

IN 1923, the Union Pacific Railroad began tests of pressure-creosoted ties in its mainline track. In the vicinity of Milepost 431.70—approximately 18 miles east of the Boise, Idaho, station—3000 Douglas Fir ties were installed. They had been treated at the Union Pacific's Pocatello treating plant by the Lowry process with 8 pounds retention.

Today 2000 of these Douglas Fir ties are still in track, with most of the removals due to splits and rail cuts.

The performance of Creosote as a wood preservative is documented by tests like this. Time and again it has been proved that Creosote will keep ties serviceable longer than their normal mechanical life.

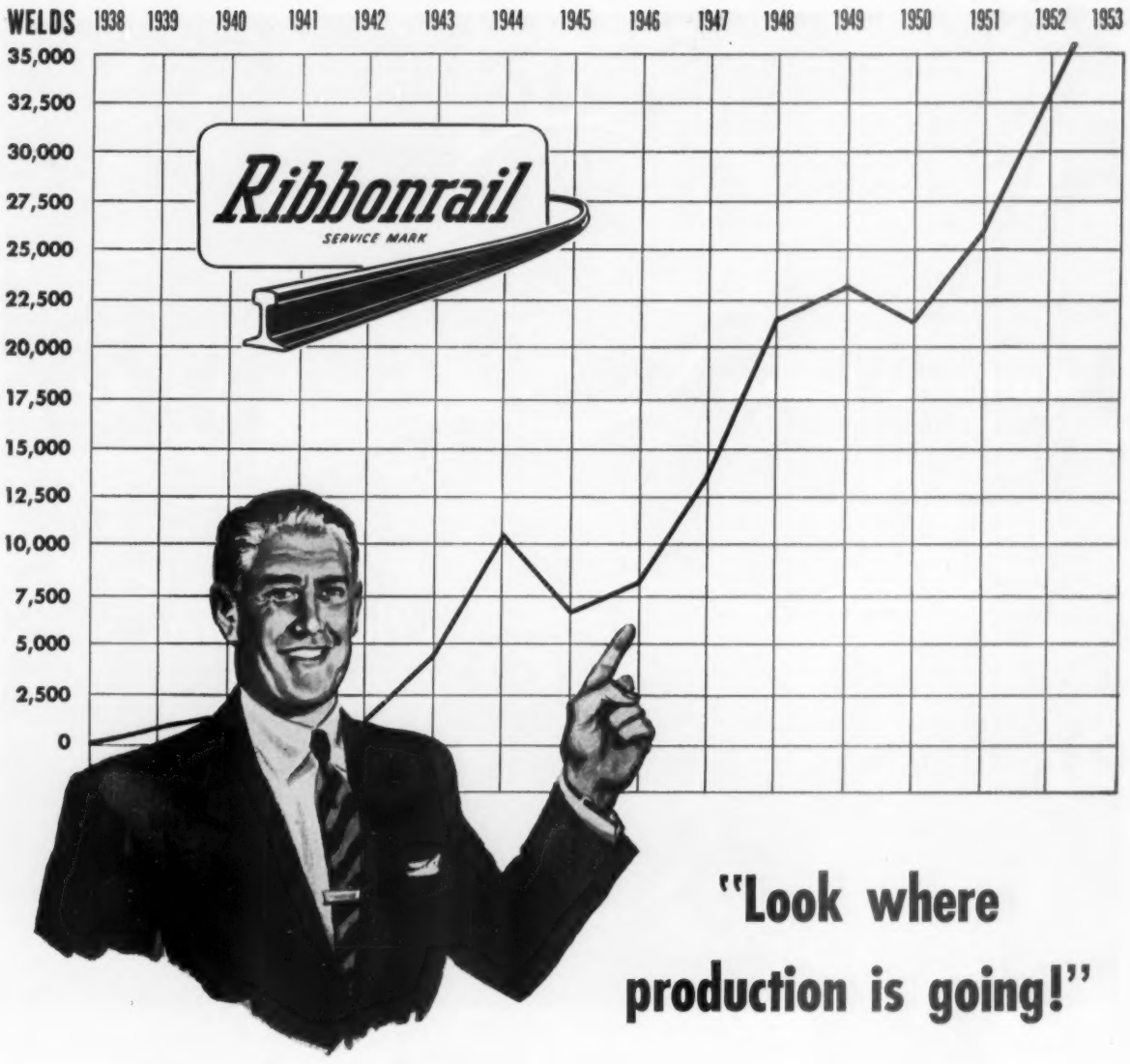
And for the best possible performance, make sure your treating plant uses USS Creosote. Here is a uniform product, the result of continuous processing in the plants of United States Steel. For complete information, contact our nearest Coal Chemical sales office or write directly to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

A UNION PACIFIC TRAIN passes over the test section. After more than 30 years in track, 2000 of the 3000 original ties are still in use.

USS CREOSOTE

4-495

UNITED STATES STEEL



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AN AIR REDUCTION PRODUCT

(*Continued from page 79*)
eral storekeeper, with headquarters as before at St. Paul, succeeding **F. C. Turner,** who has retired after more than 50 years of service. **E. K. Beals,** assistant district storekeeper at Brainerd, Minn., has been appointed division storekeeper at Missoula, Mont., succeeding **D. H. Spitz,** who has been appointed assistant to general storekeeper at St. Paul.

George M. Washington, assistant vice-president—oil development department, at Billings, Mont., has been advanced to vice-president of that department, succeeding **LeRoy H. Hines,** resigned (*Railway Age*, February 8).

Henry Hansen, assistant purchasing agent at St. Paul, retired March 1. His duties have been assumed by **G. M. DeLambert,** who is also assistant purchasing agent at that point.

F. L. Steinbright, assistant to vice-president at St. Paul, has been named general manager at Seattle, succeeding **J. F. Alsip,** who retired March 1. Mr. Steinbright also succeeds Mr. Alsip as president of the Northern Pacific Terminal, Portland, Ore.; chairman of the King Street Passenger Terminal, Seattle; president of the Camas Prairie, and vice-president of the Walla Walla Valley.

NORTHWESTERN PACIFIC. — L. E. Hoyt has been appointed superintendent at San Rafael, Cal., succeeding **A. G. Bays,** promoted.

PACIFIC OF MEXICO.—Benjamin Mendez has been appointed general manager at Guadalajara, Jalisco. Mr. Mendez was formerly operations manager for the **National of Mexico.**

PENNSYLVANIA. — Herman Flait has been appointed assistant superintendent passenger transportation —special duty at Philadelphia.

PITTSBURGH & WEST VIRGINIA.—M. E. Mayes, superintendent personnel, has been appointed director personnel at Pittsburgh.

H. A. Ross, vice-president and secretary at Pittsburgh, has been elected treasurer also. **J. L. Richards** has been appointed assistant secretary and assistant treasurer, and **H. H. Stimpert** has been named assistant secretary.

PORT HURON & DETROIT.— E. A. Temple has been appointed superintendent at Port Huron, Mich., succeeding **W. N. Boyd,** who has retired after more than 36 years' service.

ST. JOHNSBURY & LAMOILLE COUNTY. — R. G. Booth, general representative, has been appointed assistant to president with specific traffic duties and such other duties as may be assigned.

SANTA FE. — A. L. Worswick, sectional storekeeper at San Bernardino, Cal., has been advanced to division storekeeper at Bakersfield, succeeding **Scott Powell,** transferred elsewhere.

SEABOARD AIR LINE. — Dr. Southgate Leigh, Jr., has been named chief surgeon at Norfolk, Va., succeeding **Dr. Joseph D. Collins,** who has retired after more than 24 years of continuous service.

Joseph Kestner, commercial agent at Pittsburgh, has been appointed general agent at Rochester, N.Y., succeeding **S. Van Auken, Jr.,** who has retired from active duty after nearly 46 years of service.

SOO LINE.—T. R. Klingel has been appointed engineer—maintenance of way at Minneapolis, succeeding **A. D. Alderson,** transferred. **C. M. Hayes** has been appointed to the newly created position of supervisor—maintenance of way equipment for the entire system at Minneapolis. **A. D. Henninger** has been named general roadmaster, Soo district, at Minneapolis, succeeding Mr. Hayes.

George T. Bergren, assistant industrial commissioner at Minneapolis, has been appointed industrial and real estate commissioner at that point, succeeding **R. O. Lewis,** who has retired.

SOUTHERN. — William R.
(*Continued on page 87*)

This bridge was NOT protected *by the* LIBBEY-ZONE Process

LIBBEY-ZONE

the process that cuts fire loss and weather deterioration

LIBBEY - ZONE protected structures resist weather deterioration and these installations provide years of efficient protection without attention or repair.

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LIBBEY - ZONE applications are made without traffic disruption; require little time and no special equipment or trained personnel.

LIBBEY-ZONE is the time-proved fire and weather resistant system

The picture shows some of the physical damage to a through-line bridge of a major railroad as it burned recently near Chicago. What the picture does *not* show, is the disruption of schedules and the cost of repair and replacement. If this bridge had been LIBBEY-ZONE Process treated, chances are, it *would not have burned and would be standing today.*

Easy-to-apply LIBBEY-ZONE HEAVY DUTY coating and gravel aggregate is the proved answer to effective fire prevention for wooden railway structures. The LIBBEY-ZONE Process can be applied directly from the drum, without pre-heating . . . and the work is done by unskilled help. Important, too, test applications of the LIBBEY-ZONE Process made over ten years ago, show virtually no weathering effect after exposure to every imaginable type of weather.

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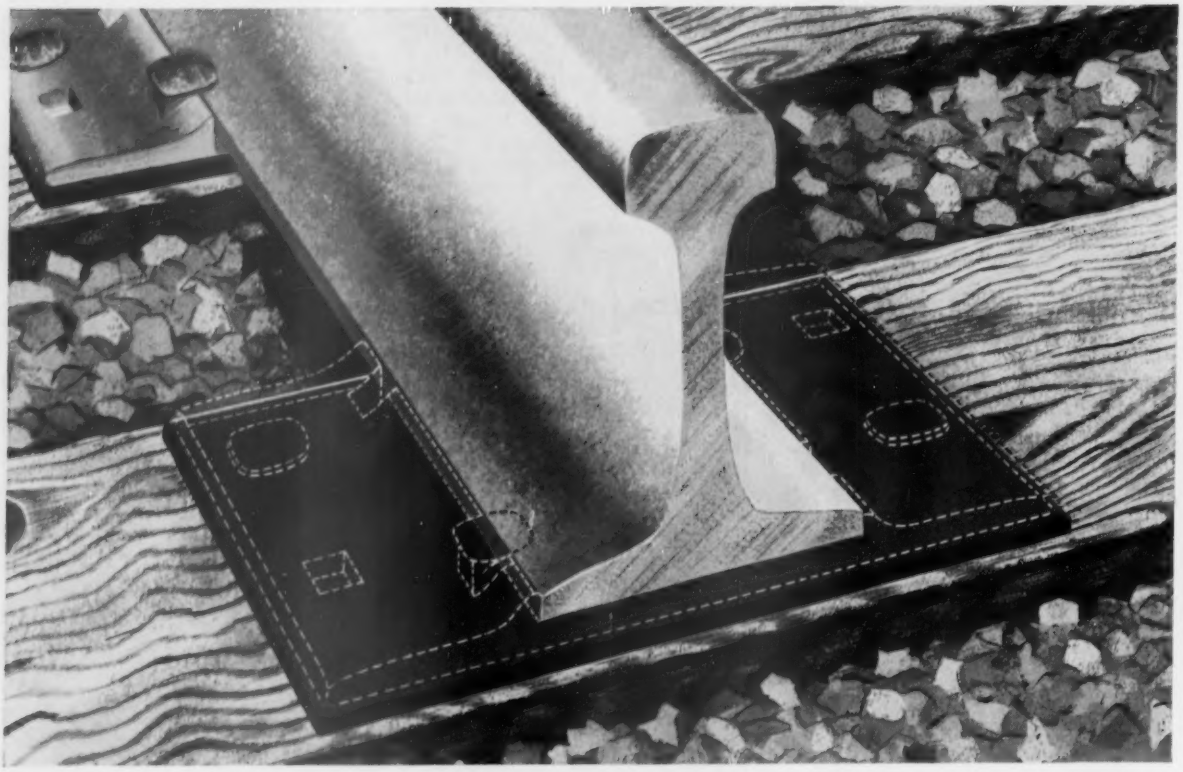
How to keep ties from dying young in trouble spots



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Formulated for low compressibility, high recovery and low plastic flow, J-M Tie Pads offer good resiliency and flexibility over the widest temperature ranges encountered in service. They are resistant to creosote, diesel and lubricating oils, brine, water and freezing and thawing.

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GREAT NORTHERN RAILWAY PHOTO

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(*Continued from page 83*)
O'Hearn has been appointed assistant general freight agent at Washington, D.C., succeeding **J. Herbert Hayghe,** who has resigned, after 24 years of service with the Southern system, to become assistant to director of traffic of the American Tobacco Company at New York.

SOUTHERN PACIFIC. — D. P. Boykin, division superintendent at Ogden, Utah, has been appointed superintendent transportation at San Francisco, succeeding **V. E. Anderson,** who in turn replaces Mr. Boykin. **W. R. Adair,** assistant superintendent at El Paso, Tex., has been advanced to division superintendent

D. P. Boykin

V. E. Anderson

there, succeeding **P. D. Robinson,** who has been transferred to Los Angeles. Mr. Adair is replaced by **A. G. Bays.**

TEXAS & NEW ORLEANS — S. E. Tanner, trainmaster at Houston, has been appointed senior assistant superintendent there, succeeding **D. R. Kirk, Jr.,** who has been appointed assistant superintendent at San Antonio to replace **O. W. Story,** resigned. **R. J. Rohlf,** assistant trainmaster at Houston, has been advanced to trainmaster, succeeding Mr. Tanner.

J. N. Albertson, communications engineer at Houston, has been appointed assistant superintendent of communications, succeeding **R. H. Bradley,** who has been named supervisor of methods and standardization there.

J. J. Moore, assistant general manager at Houston, has been appointed general manager at that point, to succeed **T. M. Spence,** who retired March 1. Mr. Moore's successor is **R. de Waal,** superintendent at San Antonio, who in turn has been replaced by **J. W. Kraemer,** assistant superintendent at Ennis, Tex. **R. W. Hickman,** assistant superintendent at San Antonio, transfers to Ennis to succeed Mr. Kraemer, while **J. E. Weatherly,** division engineer at Houston, replaces Mr. Hickman.

N. R. Tucker, assistant division engineer at Austin, Tex., has been promoted to division engineer at Houston, succeeding Mr. Weatherly. Mr. Tucker's successor is **J. N. Fuller,** principal assistant engineer at Houston.

TRAFFIC EXECUTIVE ASSOCIATION — EASTERN RAILROADS.—Orland E. Schultz has been appointed vice-chairman at New York, succeeding **C. G. Cruickshank,** resigned. **R. C. Gill** has been appointed chairman, Coal, Coke and Iron Ore Committee, Trunk Line Territory, succeeding Mr. Schultz.

WABASH. — James E. Hill has been appointed district freight agent at Chicago.

WESTERN MARYLAND.—J. L. Gorsuch, stationer at Baltimore, has retired after more than 46 years of service and the position of stationer has been abolished. **A. W. Tompkins** has been appointed assistant to general purchasing agent, and will handle in the future matters previously handled by Mr. Gorsuch.

WESTERN PACIFIC.—Stanley E. Dinkel, general agent at Seattle, has been promoted to assistant general freight agent at San Francisco and has been succeeded by **Robert Munce, Jr.,** traffic representative at Stockton, Cal. Both appointments apply also to the **Sacramento Northern** and the **Tidewater Southern,** WP subsidiaries.

OBITUARY

Robert E. Kimbell, retired comptroller of the **Illinois Central,** died March 3 at Miami, Fla.

James E. Clark, who retired in 1939 as assistant general freight agent of the **Chesapeake & Ohio** at Buffalo, died February 22 in that city.

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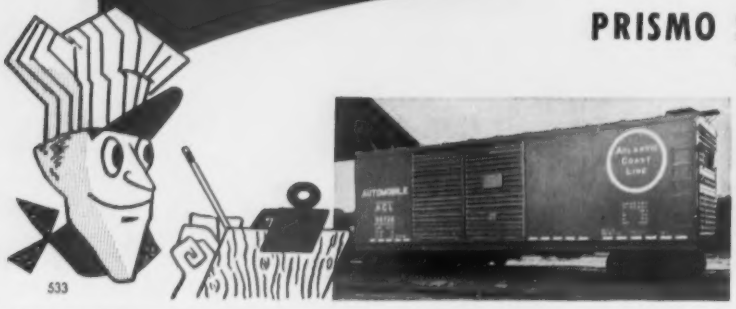

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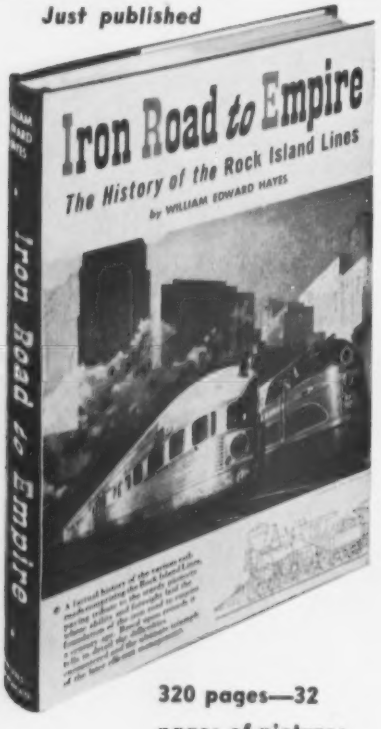

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Shippers' Advisory Boards Point Out the Need for More Modern Cars

From north to south, east to west, inadequate flooring in freight cars is a recurring topic at Shippers' Advisory Board Meetings. The following excerpts are typical:

Several reports were made that the condition of many boxcars placed for loading was very unsatisfactory . . . there were *holes in the floors* and so forth. This requires repair work before the shipper can use the car. In some instances where cars of this type were rejected, there were no others available for loading.

Midwest 10/22/53

"Our attention was also called to the furnishing of poor class cars, *particularly with unsatisfactory floors . . .*"

Pacific Northwest 9/18/53

"The condition of box cars is generally due to *bad conditions of floors* and at the doors."

Southeast 9/18/53

"We have had many reports of *bad floors*, walls and ends . . ."

Allegheny Regional 9/17/53

". . . they must take steps toward a long-range program of improving equipment . . . just as steam locomotives have been retired and replaced with Diesels, it certainly is possible to so replace out-dated equipment as it retires, with the best of the new, and do so at the normal rate of retirements and replacement."

Pacific Coast 3/12/53

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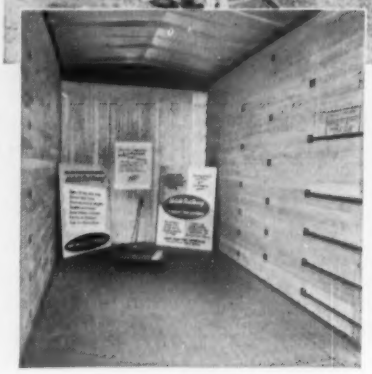

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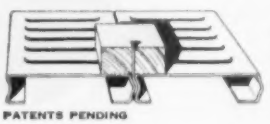

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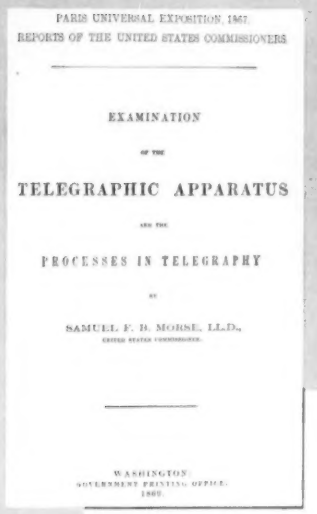

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BY

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1869.

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The kerite compounds of Austin Goodyear Day, mentioned in the following memoir, were honored by two medals and an honorable mention by the jury of the Exposition Universelle, to whom the subject was referred. These awards covered other products than the electrical cables and insulators which are the special object of the descriptive memoir.

NOTE UPON INSULATION AND KERITE, BY PROFESSOR SILLIMAN.

The exhibition of the kerite, this product of the persevering labors and experiments of Mr. Day for so many years, furnishes an example of the not infrequent inappreciation, or rather overlooking, of an invaluable discovery, when modestly presented, as in this case, among the more showy articles by which it was surrounded.

True, it received honorable mention as "artificial India-rubber," and a bronze medal for its very limited application to "India-rubber cases;" but its superlative value as a substitute in insulation for India-rubber and gutta-percha was not, for it could scarcely be, appreciated, presented as it was simply in one of its more ordinary applications; so that heedless neglect is not charged upon the jury, but it is mentioned rather as an example of the existence of an unnoticed quality in an apparently trifling discovery, necessarily latent to superficial inquiry; a quality which is destined in this case to have a most important bearing upon submarine and subterranean telegraphy.

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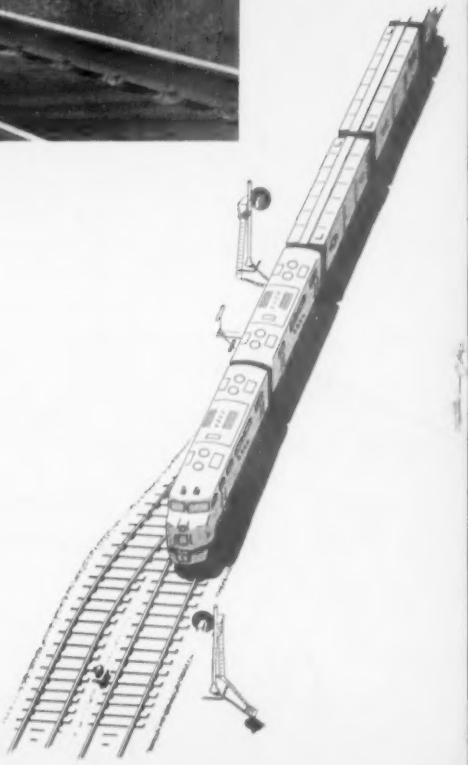

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